



# PACIFIC PETROLEUM GEOLOGIST NEWSLETTER

of the Pacific Section

American Association of Petroleum Geologists

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NUMBER 1

## 53RD ANNUAL CONVENTION PACIFIC SECTION AAPG-SEPM-SEG

April 26-29

It is only fitting that a convention whose heady theme is "**Energy Exploration and Politics**" should be preceded by a little education. This will be the case and, moreover, it will be the first time that a continuing education program will have been held in connection with the Pacific Section's annual meeting.

Roland Bain, chairman of the education program, says that two three-hour courses will be held on Wednesday, April 26, while the convention program will follow in the next three days. Bain has announced that one course, "Concepts of Structural Geology for Petroleum Geologists," will be conducted by Dr. John C. Crowell of the University of Santa Barbara. The other course, "General Survey - Geophysics for Explorationists," will be presented by Mr. R. E. Sheriff, Senior Vice-President of Seiscom Delta, Inc., of Houston.

## USC GEOLOGICAL SCIENCES SEMINAR

\*March 29: Wednesday, 4:00 p.m.  
SSC 150

Dr. David McCulloch, USGS—Menlo Park—Some Ground Effects of the 1964 Alaska Earthquakes.

\*Tentative—Call 741-2717 for verification of date.

April 5: Wednesday, 4:00 p.m.  
SSC 150

Dr. David Rubin, USGS—Menlo Park—Single and Superimposed Equilibrium Bedforms: A Synthesis of San Francisco Bay and Flume Observations.

April 19: Wednesday, 4:00 p.m.  
SSC 150

Dr. Heinz Lowenstam, Cal. Tech., Los Angeles — Biomineralization of Marine Organisms — Biological and Sedimentological Implications.

May 3: Wednesday (tentative)  
SSC 150

Dr. H. James Simpson, Columbia Uni-

versity, New York Pollutant Accumulation in Estuarine Sediments.

May 10: Wednesday, 4:00 p.m.  
SSC 150

Dr. Miriam Kastner, SIO, San Diego—Physical and Chemical Controls on the Rate of Silica Diagenesis.

## 63rd ANNUAL AAPG CONVENTION

April 9-12, 1978

Myriad Convention Center  
Oklahoma City

The technical program will run three days containing 36 sessions of geology, geophysical and engineering technology. AAPG's new Energy Minerals Division will be supplying many papers in the areas of coal, geothermal and nuclear energy as well as oil shale and tar sands development. Four short courses will be offered preceding the meeting, numerous research study groups and seven field trips, both pre- and post-convention.

Social events planned for the enjoyment of all will include a Convention Party with the theme "Shootout at the OK Corral" where chuckwagons filled with barbecue will roll into the hall. Lots of lively entertainment and music will prevail, and the saloons will stay open until closed by the marshal. Ladies' activities are abundant with a luncheon and fashion show by the famous designer, Bill Blass. Sight-seeing will include the National Cowboy Hall of Fame and an "End of the Trail" brunch and a special display of Oklahoma's western heritage.

AAPG's Energy Resource Development Exhibition will be located in the arena of the Myriad, the center of the activity. Coffee and juice bars will provide attendees refreshments as they browse through the display of the most up-to-date products available in our search for new energy resources.

Further information about AAPG's Annual Convention and Exhibition can be obtained from AAPG Headquarters, P.O. Box 979, Tulsa, OK 74101.

## FIRST CALL FOR PAPERS AAPG-SEPM ANNUAL MEETING

April 1-4, 1979, Houston, Texas

The Technical Program Committee for the Houston meeting in 1979 will receive titles and abstracts for consideration until October 1, 1978. Members and others sponsored by members are eligible. Detailed instructions will be mailed to all members at a later date. Author candidates are urged to submit early to one of the following Technical Program Chairmen:

AAPG—William H. Roberts III, Gulf R. & D. Co., Boff 36505, Houston, TX 77036

SEPM—John E. Warme, Dept. Geology, Rice University, Houston, TX 77001

EMD—R. J. Tondou, Getty Oil Co., 6750 W. Loop South, Houston, TX 77401

POSTER SESSIONS—Wallace G. Dow, Getty Oil Co., 3903 Stoney Brook, Houston, TX 77063

The theme of the 1979 meeting is "**Our Ideas Find Oil.**" The thrust of the technical program comes from the acceptance of our responsibility to increase fuel and energy mineral supplies. That responsibility requires the acknowledgment and testing and worthy new ideas and the intelligent use of every available technique and device. The AAPG technical sessions will be organized under four major headings as follows:

**Fossil Fuels and Near-Term  
Substitutes**

**The Exploration Record  
Exploration Frontiers and  
Techniques**

**Professional Affairs**

## 1979 PACIFIC SECTION ANNUAL CONVENTION

Disneyland Hotel  
March 21-24, 1979

WAYNE D. ESTILL  
General Chairman

# **Pacific Section**

**NOMINEES FOR OFFICE  
Membership Year 1978-1979**

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## **President-Elect**



**STANFORD ESCHNER**

### **Education:**

UCLA—BA Geology, 1954  
UCLA—MA Geology, 1958

### **Activities:**

Member of SPE and AIME  
Charter Member of AIPG  
Member of AAPG  
Registered Geologist, State of California

Over the past years, Stan has served the Pacific Section in various capacities including work on conventions, presentation of technical papers, organization of field trips, as a member of section committees, as Secretary, and most recently as General Chairman of the 1977 Convention which was held in Bakersfield.

### **Experience:**

Lt. in Corps of Engineers as Geologist—1955-1957  
Production Geologist—Shell Oil Company—1957-1940  
Exploration Geologist—Occidental Petroleum Corporation—1961 to present  
Currently, Vice President-Manager of Domestic Operations for Occidental Exploration and Production Company

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## **President-Elect**

**WILLIAM F. EDMONDSON**

### **Education:**

B.S., California Institute of Technology, 1952

### **Experience:**

Superior Oil Company, Bakersfield, 1952-54 and 1957-59  
Consultant in Partnership with H. W. Reynolds, Jr., 1959-1972  
Westates Petroleum Company, Bakersfield, 1974-75  
Vice President Mariposa Petroleum Company, Bakersfield, 1976 to present

### **AAPG Activities:**

Vice President, San Joaquin Geological Society, 1962  
President, San Joaquin Geological Society, 1975-75  
Secretary, Pacific Section AAPG, 1966-67  
Vice President, Pacific Section AAPG, 1972-73  
Editor, Selected Papers presented to San Joaquin Geological Society Volume 2, 1964  
AAPG Program Chairman, Pacific Section AAPG-SEPM-SEG Convention, 1965  
Program Coordinator, Pacific Section AAPG-SEPM-SEG Convention, 1968 and 1972  
Preprint Chairman, Pacific Section AAPG-SEPM-SEG Convention, 1977

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## **Vice-President**



**THEODORE (TED) OFF**

President, Ojai Oil Co., Ventura, CA  
Born, January 19, 1928, Los Angeles

### **Education:**

1946-51—Stanford University, B.S., M.S., petroleum engineering  
1953-54—Princeton University

### **Military Service:**

1951-52—U.S. Navy

### **Experience:**

1950—Union Oil Co., geologist  
1952-53—Shell Oil Co., exploitation engineer  
1954—Ojai Oil Co.  
1954-57—Geologist  
1968—President

### **Publications:**

Ventura basin geology, log interpretation, recent tidal sedimentation

### **Professional Affiliations:**

AIPG (Certified Professional Geologist no. 619; California Section President, 1971-72; Section Legislative Chairman, 1974-75);  
AAAS (Fellow);  
Pacific Section AAPG;  
Coast Geological Society

### **AAPG Activities (Member, '51):**

1972—Comm. on Preservation of Samples and Cores  
1973—Convention Vice Chairman  
1974—Public Information Committee

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## **Vice-President**



**BRUCE M. BARRON**

### **Education:**

BA Geology, UCLA 1953

### **Experience:**

1943-47—Air Force  
1948-53—UCLA  
1953-56—Formation Logging Co.  
1956-59—Pacific Oilwell Logging Inc.  
1959-69—Oil Well Research Inc.  
1969-71—Petrol Chem. & Eng. Inc.  
1971-77—Oil Well Research Inc.  
1977—Petroleum Testing Service Inc.

### **Activities:**

1968—Publicity Chairman—Pacific Section Convention  
1970—AIPG, Secretary-Treasurer, California Section  
1972—AIPG, Vice-President, California Section  
1972—AAPG—Program Committee—Pacific Section Convention  
1974-76—AIPG (APGS) —Editor, California Section  
1975—AAPG—General Chairman—Pacific Section Convention  
1976—LABGS—Vice-President  
1977—LABGS—President

**ROBERT C. BLAISDELL****Education:**

MA 1955—U.C. Berkeley

**Experience:**Geologist with Chevron U.S.A. Inc.,  
Western Region**Activities:**General Chairman of the 1976  
Fifty-First Annual Meeting of  
Pacific Sections AAPG, SEPM &  
SEG, held in San Francisco  
National AAPG Delegate, 1969  
❖ ❖ ❖**Secretary****WILLIAM BAZELEY**Born, South Africa, 1930  
Came to U.S.A., 1943**Education:**

Graduated U.C. Berkeley, 1951

**Experience:**1951-1954—Baroid Mud Logging  
1954-1957—Richfield Oil Corporation  
1957-1960—UCLA  
1960-1978—Richfield Oil Corporation  
and Atlantic Richfield,  
Senior Geologist**Activities:**

SIGMA XI

AAPG

GSA

San Joaquin Geological Society  
Member Bakersfield Geological  
Seminar CommitteeAlternate Delegate to AAPG for San  
Joaquin Geological Society

Editor Pacific Section 1977

Guidebook "Late Miocene Geology  
and New Oil Fields of the  
Southern San Joaquin Valley"**1979 CORDILLERAN  
SECTION GSA**Have you an idea for symposia or  
for pre- or post-convention field trips  
for the 75th Annual Meeting of the  
Cordilleran Section of the Geological  
Society of America? The meeting is  
scheduled to be held April 9-11, 1979,

at San Jose State University, California. It will commemorate the Centennial of the U.S. Geological Survey and the Diamond Jubilee of the Cordilleran Section of GSA.

Please forward any ideas for symposia or field trips to Program Chair Mary Hill, U.S. Geological Survey, 345 Middlefield Road, Menlo Park, CA 94025 as soon as possible. We hope to have a preliminary list of symposia and trips available by the time of the 74th annual meeting in Tempe, Arizona, at the end of March, 1978.

Committee chairs for the 75th meeting are:

Calvin H. Stevens and  
Marshall Maddock

Local Cochairs

R. S. Creely, Field Trip Chair  
Mary Hill, Program Chair**MEMBERSHIP DIRECTORY**The 1977 Pacific Section AAPG Membership Directory will soon be available for a minimal charge (*free*) at the monthly meetings of the local societies. The directories will also be available at the 1978 Sacramento Convention. The directories will be sold at this price to Pacific Section members. Cost to non-members will be \$5.00.

It was decided by the Executive Committee to publish the directory every other year because of the expense involved in an annual directory. Changes or additions to the 1977 Directory should be sent to Bob Davis, 3286 West Sierra Drive, Westlake Village, California 91361.

R. A. DAVIS, JR.  
Union Oil Co.  
Box 6176, Ventura, CA 93003**Los Angeles**

The Los Angeles section enjoyed a full year in 1977 and looks forward to an even more promising one for 1978. During 1977, we were fortunate to have exceptionally fine talks presented at our monthly luncheon meetings, and two fine barbecue meetings during the evening in the summer.

Unfortunately the old revered Northen station, belonging to Standard Oil, where we held the evening barbecues for years, was bulldozed down for "progress," and we were forced to move further out to Union's Rubel Park in Brea. For this year, 1978, the three evening barbecue meetings will probably be held somewhere in the vicinity of North Long Beach, just adjacent to the 605 Freeway, which should make it very convenient for all the Basin members.

In February of 1977, the Basin Section sponsored an excellent colloquium on the structural aspects of the Pacific offshore area. This one day meeting was put together by Jan Vargo and Bob Davis of Union Oil, recently transferred to the Ventura coast area. An excellent family field trip through the Western portion of the Santa Ana Mountains was held in November. This field trip, put together by Russ Miller of the Division of Mines and Don Fife of Converse and Davis, was ably led by those two gentlemen and occurred on a beautiful day, luckily between two very stormy ones. The guidebook for this field trip could be made available if enough persons are interested.

The monthly luncheon meeting presentations ranged from deep down in the hot geothermal earth to high up in satellite remote sensing units.

The luncheon meetings for 1978 will continue to be held at Taix Restaurant on Sunset Boulevard in Los Angeles.

BRUCE M. BARRON

**PACIFIC SECTION SEPM**The Pacific Section SEPM entered its second year on the theme of Paleogeography of the Pacific Coast with a very successful fall field trip. The field trip led by D. G. Howell, Hugh McLean, and J. G. Vedder, looked at the Cretaceous rocks of the Central California Coast near San Luis Obispo. The guidebook accompanying the trip is entitled *Cretaceous Geology of the California Coast Ranges, West of the San Andreas Fault*. It is available for \$5.00 at the following address:Pacific Section SEPM  
P.O. Box 70344  
Ambassador Station  
Los Angeles, CA 90070

REINHARD SUCHSLAND

**Pacific Section Publications**

There is now a new address for the Publications Committee of the Pacific Section, AAPG. When ordering publications please order by item number as well as by the name of the publication. This information can be found on the new publication list included in this newsletter. Advance payment for publications is not required but will expedite your order.

The new address is:

Publications Committee  
Pacific Section, AAPG  
P.O. Box 4164  
Thousand Oaks, CA 91359

# San Joaquin

What is an announcement? I don't really know, but the SJGS has three. Here goes.

First, the 1978 Short Course will again be at West High School in Bakersfield with AAPG Lecturer Paul Newendrop discussing "Petroleum Exploration Economics and Risk Analysis." The dates are March 10-11. Both geologists and engineers will benefit. See you there.

Second, O. F. Huffman has special insight into "Lateral Displacement of Upper Miocene Rocks Along the San Andreas Fault." March 14 at the American Legion Hall, as usual. For us Crowellites, and you too, it should be great.

Third, April 14 has special significance for most of us, as the SJGS will host the new Pacific Section Spring Picnic with golf and tennis also planned. Previously most local societies held spring BBQ's. Our springtime is always busy, but with three or four Friday afternoons taken for golf, tennis, steaks and the rest, those special

people who rule over us rightfully wondered the same thing we always wonder—how do I still have a job? Well, the powers that be decided to make one spring picnic on a rotational basis. SJGS will initiate this new gathering at the Kern River Picnic grounds. The format will remain similar to our usual—golf at the Kern River Golf Course beginning at 7:00 a.m., tennis at the Rio Bravo Tennis Ranch at noon, with dinner to start at 6:00 p.m. It will be fun. Place a special mark on the calendar for April 14.

So much for announcements. Let's now cover some old information. Nearly 300 (it seemed like 3,000) thoroughly enjoyed Bill Rintoul show our industry's humble beginnings in the Taft (Moron?), Reward, and Maricopa areas of California. What a place! Did you know they even had windstorms in those days similar to our latest here in Kern County? Blew down over half the wooden derricks in the Midway area. Unbelievable! A really excellent evening for our wonderful spouses on Ladies' Night, too. Bill said he has a second book ready for the presses soon that includes the material in his talk.

Hugh Wilson had a real thought provoker in last week's talk of diagenetic traps. Many of us have some difficulty explaining tilted water tables and the like without awfully special geologic phenomena, and Hugh gave us food for thought.

Lastly, I noticed at our last meeting a larger number of gals in attendance. It seems each year we continue to have better representation from the opposite sex. For a committed MCP, it was tough. Now I'm finding Gloria may have been right after all. And even better, Pam, Sue, Beth and Nancy are better looking than all of us guys put together. Just hope the schools continue to direct those fine female minds into the sciences where we need them.

JEFF SMITH

## JOB OPPORTUNITY

Sabbatical replacement in structural geology, Dept. Geology, Oregon State University, for 1978-79 academic year. An applicant with extensive subsurface structural geology background and an intimate knowledge of southern California geology could do research in active faults funded by Earthquake Hazards Reduction Program of USGS. We also need an outstanding teacher at the beginning level for a one year appointment. Contact Robert S. Yeats, chairman. OSU is an equal opportunity-affirmative action employer.

## NEVADA WELL SAMPLE REPOSITORY

### Well Sample Repository Catalog Available

A catalog of the rock sample material contained in the Nevada Bureau of Mines and Geology Sample Library is available for \$1.00 from the NBMG Sales Office at the address below.

### Location

The NBMG Sample Library is located in two, small, prefab buildings on the campus of the University of Nevada Reno. The facility consists mainly of storage racks but does contain a desk and tables where the cuttings and core can be spread out for examination. The collection was begun in 1963, and has expanded until the present space will soon be filled.

### Use

Anyone wishing to examine the core and cuttings in the NBMG Sample Library should make an appointment by contacting Becky Weimer (geologic information specialist) at her office (Room 311, Scrugham Engineering-Mines Building on the campus of the University of Nevada Reno) or by phone (702-784-6691). Samples are only available for examination; destructive tests may not be run nor may "cuts" be made or pieces of material removed. Samples cannot be loaned out or removed from NBMG premises. A binocular microscope is available for use when examining cuttings, other equipment must be supplied by the user.

### Other Information on Oil and Gas Wells

The Nevada Bureau of Mines and Geology (NBMG) also has files of logs and other information on oil and gas wells. This information is available for inspection (contact Becky Weimer). And NBMG also sells publications with additional information (a publications list will be sent on request).

### Sample Donations Welcomed

NBMG is interested in acquiring additional core and cuttings, as well as accompanying logs, geologic maps, etc., but our ability to accept material is limited because of the inadequate space within our present storage facilities, and we cannot automatically accept everything offered. Please contact the Director if you have material that you would like to donate.

John Schilling, *Director*  
Nevada Bureau of Mines  
and Geology  
University of Nevada  
Reno, NV 89557

### PACIFIC SECTION — AMERICAN ASSOCIATION PETROLEUM GEOLOGISTS

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CHANGE OF ADDRESS, subscription, and membership inquiries should be directed to: MEMBERSHIP SECRETARY, PACIFIC SECTION AAPG, P.O. BOX 1072, BAKERSFIELD, CALIFORNIA 93302.

PUBLICATIONS COMMITTEE: Pacific Section American Association of Petroleum Geologists, P.O. Box 4164, Thousand Oaks, CA 91359.

# *Fifty-Third Annual Meeting*

## **PACIFIC SECTION AAPG, SEPM, SEG**

**SACRAMENTO, CALIFORNIA • APRIL 26-29, 1978**

# **TENTATIVE TECHNICAL PROGRAM**

### **THURSDAY MORNING — APRIL 27 JOINT AAPG, SEPM, SEG**

- 9:00 a.m.—Keynote Address—*Tentative*.  
 9:45 a.m.—Regulation of Oil Industry, *Art Spaulding*, WOGA.  
 10:00 a.m.—Geology Board, *Bill Park*, Consultant.  
 10:20 a.m.—Role of Public Utilities Commission, *R. Batinovich*, President P.V.C.  
 10:40 a.m.—*Tentative*.  
 11:00 a.m.—Role of Environmentalists in Formulation of Energy Policy, *Mike Eaton*, California Energy Coordinator, Sierra Club.  
 11:25 a.m.—Insignificant Oil Fields, North American Paradox, *F. K. North*, San Diego State.

### **THURSDAY AFTERNOON — APRIL 27 — AAPG**

- 2:00 p.m.—Remote Sensing for Energy Resources, *A. R. Barringer*, President, Barringer Research, Inc.  
 2:25 p.m.—Statistical Curvature Analysis Techniques for Structural Interpretation of Dipmeter Data, *C. A. Bengtson*, Chevron U.S.A., Inc.  
 3:00 p.m.—Upper Miocene Turbidite Deposition, Crocker Canyon Area, S.W. San Joaquin Valley, California, *S. Chandler*, *R. Bowerson* and *E. Miller*, Getty Oil and Bakersfield State.  
 3:35 p.m.—Plate Tectonic Evolution of the Sacramento Valley, California, *W. R. Dickenson* and *R. V. Ingersoll*, Stanford University.  
 3:55 p.m.—Trap Springs Oil Field, Nye County, Nevada, *H. D. Duey*, Northwest Exploration Co.  
 4:20 p.m.—Geothermal Energy Exploration and Government Control, *Dave Anderson*.  
 4:40 p.m.—Stratigraphy and Sedimentology of Tertiary Strata in Cold Bay Area of the Alaska Peninsula, *Hugh McLean*, USGS, Menlo Park.

### **THURSDAY AFTERNOON — APRIL 27 — SEPM**

- 1:40 p.m.—Opening Remarks, *Donn S. Gorsline*, USC, Los Angeles.  
 1:50 p.m.—Early Miocene Submarine Dune Fields—Cross Bedding in the Vaqueros Formation Along Sespe Creek, Ventura County, California, *Stephen A. Reid* and *Eugene A. Fritsche*, Department of Geosciences, California State University, Northridge.  
 2:10 p.m.—Upper Miocene Barrier Beach-Saline Lagoon Complex, Upper Sespe Creek, Ventura County, Cali-

fornia, *Devin R. Thor*, U.S. Geological Survey, Menlo Park.

- 2:30 p.m.—A New Miocene Formation at Coos Bay, Oregon, *John M. Armentrout*, Mobil Oil Corporation, Denver, Colorado.  
 2:50 p.m.—Holothurian Microfossils and Eocene Stratigraphy of Southwest Oregon, *G. A. Miles*, Exxon Exploration, Houston Texas, and *W. N. Orr*, Geology Department, University of Oregon, Eugene, Oregon.  
 3:10 p.m.—Foraminiferal Biostratigraphy in the Gulf of Alaska Tertiary Province, *Weldon W. Rau*, Washington State and U.S. Geological Survey, Olympia, Washington, *George Plafker* and *G. R. Winkler*, U.S. Geological Survey, Menlo Park.

### **COFFEE BREAK**

- 3:35 p.m.—Recent Benthonic Foraminiferal Biofacies in the Arctic Ocean, *Martin B. Lagoe*, Atlantic Richfield Company, Anchorage, Alaska.  
 3:55 p.m.—Distribution of Recent Foraminifera in the Gulf of Alaska, *F. W. Bergen* and *P. O'Neil*, Shell Oil Company, Houston, Texas.  
 4:15 p.m.—Alteration of Alluvium by Natural Gas in the Pyramid Lake Area, Nevada, *Nikola P. Prokopovich*, U.S. Bureau of Reclamation, Mid-Pacific Region, 2800 Cottage Way, Sacramento 95825  
 4:35 p.m.—Lithofacies in Lower Jurassic Volcaniclastic Rocks Adjacent to Lower Cook Inlet, Southwestern Kenai Peninsula, Alaska, *J. S. Kelly*, Dept. of Geology, University of California, Davis, 95616.

### **THURSDAY AFTERNOON — APRIL 27 — SEG**

- 2:00 p.m.—The Emergence of National Oil Companies, *John Northwood*.  
 2:45 p.m.—Integrated Exploration, *T. R. LaFehr*.  
 3:15 p.m.—Exploration in Rugged Terrain, *T. R. LaFehr*, *D. J. Guion* and *A. T. Herring*.  
 3:45 p.m.—Exploration Risk Analysis: The Development Decision for Frontier Areas, *J. E. Warren*.  
 4:15 p.m.—Summary of Recent Exploration and Evaluation Work on NPRA, *S. O. Patterson* and *J. K. Harris*.

### **FRIDAY MORNING — APRIL 28 — AAPG**

- 8:30 a.m.—The Tertiary Submarine Valley System Beneath the Sacramento Valley, *L. Redwine*.  
 9:30 a.m.—Workshop on Urban Oil and Gas Development, *Les Hill*, DOG, Coalinga.

- 10:05 a.m.—Petroleum Occurrences in the Santa Margarita Formation, West Santa Cruz Mountains, California, *R. L. Phillips*, USGS.
- 10:30 a.m.—Tertiary Geology and Oil Shale Resources of the South Elko Basin, Nevada, *B. J. Solomon, McKee and C. A. Brook*, USGS, Menlo Park.
- 11:00 a.m.—Desert Peak Area, Nevada, *Walter Benoit*, Phillips Petroleum, Reno.
- 11:30 a.m.—A Synthesis of OCS Well Data, Offshore California, Oregon and Washington, *D. L. Ziegler and J. K. Cassell*, Chevron U.S.A., Inc.

JOINT LUNCHEON — 12:30 to 2:00 p.m.

**FRIDAY MORNING — APRIL 28 — SEPM**

- 9:00 a.m.—Opening Comments, *David G. Howell*, U.S. Geological Survey, Menlo Park.
- 9:10 a.m.—Mesozoic Continental Accretion of North America, *D. L. Jones*, U.S. Geological Survey, Menlo Park, *N. J. Silberling*, U.S. Geological Survey, Denver, Colorado and *J. W. Hillhouse*, U.S. Geological Survey, Menlo Park.
- 9:35 a.m.—Mesozoic Paleogeography and Paleotectonics, Supplee-Izee/Aldrich Mountains Inlier, Central Oregon, *William R. Dickinson*, Dept. Geology, Stanford University and *Thomas P. Thayer*, St. Petersburg, Florida.
- 10:00 a.m.—Paleogeographic Model for the Early Mesozoic of the Southern Sierra Nevada, *J. Saleeby, S. Goodin, C. Busby and W. Sharp*, Dept. Geology and Geophysics, University of California, Berkeley.
- 10:25 a.m.—Paleogeographic Significance of the Middle to Late Jurassic Sedimentary Sequence, Sierra Nevada Foothills, California, *Philip G. Behrman and Gary A. Parkinson*, Dept. Geology and Geophysics, University of California, Berkeley.

COFFEE BREAK

- 10:50 a.m.—Mesozoic Paleogeography of California, a Viewpoint from Isotope Geology, *R. W. Kistler*, U.S. Geological Survey, Menlo Park.

NO ABSTRACT

- 11:15 a.m.—The Age of Sedimentation/Diagenesis for the Bedford Canyon Formation and the Santa Monica Slate in Southern California; a RB/SR Evaluation, *Joseph J. Criscione, Terry E. Davis and Perry Ehlig*, Dept. Geology, California State University, Los Angeles.
- 11:40 a.m.—Mesozoic Geology of Peninsular California and Western Mexico, *Gordon Gastil and George Morgan*, San Diego State University, San Diego.

**FRIDAY MORNING — APRIL 28 — SEG**

- 9:00 a.m.—Seismic Exploration Leading to the Discovery of the Trap Spring Field, Nevada, *John Vreeland and Bert Berrong*.
- 9:30 a.m.—Multiple Reflections and Head Waves in the Gulf of Suez, *S. N. Domenico*.
- 10:00 a.m.—Modern Methods of Acquiring and Processing Geophysical and Geochemical Data Using the R/V HOLLIS HEDBERG, *J. A. McDonald*.
- 10:30 a.m.—A Review of 3D Seismic Case Histories, *M. R. Bone*.
- 11:00 a.m.—The Magnetotelluric Geophysical Exploration Method—A Review, *Y. Shoham*.
- 11:30 a.m.—Magnetotelluric Exploration—An Update, *D. Halpin and A. Orange*.

**FRIDAY AFTERNOON — APRIL 28 — AAPG**

- 2:00 p.m.—Union Island Gas Field, California, *Clarence Harr*, Union Oil, Ventura.
- 3:05 p.m.—Onshore Washington and Oregon, *Don Ford*.
- 3:30 p.m.—East Mesa Geothermal Field, California, *Greg Smith*, Republic Geothermal, Inc.
- 3:55 p.m.—Coal for California, *J. C. Osmond*, PG & E, San Francisco.
- 4:20 p.m.—Coso Area Geothermal Developments, *Dr. Carl F. Austin*, Naval Weapons Center.

**FRIDAY AFTERNOON — APRIL 28 — SEPM**

- 2:00 p.m.—Late Cretaceous Depositional Environments, Northern Santa Ana Mountains, Southern California, *Frederick A. Sundberg*, Dept. Geological Sciences, San Diego State University, San Diego and *John D. Cooper*, Dept. Earth Sciences, California State University, Fullerton.
- 2:25 p.m.—The Salinian Block of California, an Enigma, *D. G. Howell and J. G. Vedder*, U.S. Geological Survey, Menlo Park.
- 2:50 p.m.—Late Cretaceous Sedimentation in the Santa Monica Mountains, California, *Sean McK. Carey and Ivan P. Colburn*, California State University, Los Angeles.
- 3:15 p.m.—A Cretaceous and Early Tertiary Subduction Complex, Mendocino Coast, Northern California, *Steven B. Bachman*, Chevron U.S.A., San Francisco and Dept. Geology, University of California, Davis.

COFFEE BREAK

- 3:50 p.m.—Franciscan Assemblage of Northern California, a Reinterpretation, *Clark Blake*, U.S. Geological Survey, Menlo Park.

NO ABSTRACT

- 4:15 p.m.—Mesozoic Tectonics of Western U.S.A., *Warren Hamilton*, U.S. Geological Survey, Denver, Colorado.

NO ABSTRACT

- 4:50 p.m. Mesozoic Construction of Cordilleran "Collage" Central British Columbia to Central California, *G. A. Davis*, University of Southern California, Los Angeles, *J. W. H. Monger*, Geological Survey of Canada, Vancouver, B.C. and *B. C. Burchfiel*, MIT, Cambridge, Massachusetts.

**FRIDAY AFTERNOON — APRIL 28 — SEG**

- 2:00 p.m.—Equalizing the Stacking Velocities of Dipping Events, *John Sherwood*.
- 2:30 p.m.—Breakthroughs, Bright Spots, and Beware, *B. S. Flowers*.
- 3:00 p.m.—The Contribution of Shear Waves to Stratigraphic Interpretation, *G. Omnes*.
- 3:30 p.m.—The Use of Vertical Gradient Aeromagnetic Data for Geologic Mapping on the North Slope, *J. L. Friedberg*.

**SATURDAY — APRIL 29 — FIELD TRIP**

- ... to the Geysers, Castle Stream Field Trip Route will be through Capay Valley Area and Exposures of Great Valley Sequence as well as Clear Lake Region Volcanics.

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## IN MEMORIAM

**Dr. Ian Campbell**, renowned scientist and retired California State Geologist, died on Saturday, February 11 in San Francisco. He was 78.



He was appointed State Geologist in 1969. For some months in 1967, he served as State Director of the Department of Conservation under Governor Ronald Reagan.

Ian Campbell was born in Bismarck, North Dakota, and graduated from the University of Oregon with an A.B. degree in 1922. He held a teaching fellowship for one year at Northwestern University and completed his graduate program with a Ph.D. from Harvard University in 1931, where he was a teaching assistant in mineralogy. During these years he also spent one season with the Wisconsin State Geological Survey, served on the faculty of Louisiana State University, and worked for the Vacuum (now Mobil) Oil Company.

From 1931 to 1959 he was on the faculty of the Division of Geological Sciences at the California Institute of Technology. In this period he also held appointments with the Carnegie Institution of Washington, the U.S. Geological Survey, and during the last part of World War II, with the University of California's Division of War Research at the Navy Radio and Sound Laboratory at San Diego.

Dr. Campbell was a charter member of the California State Board of Registration for Geologists and Geophysicists, appointed by Governor Ronald Reagan in 1969. He served on the board until his death, and was President of it from 1972 to 1974.

Campbell's awards are many. In 1962, he received the Hardinge award from the American Institute of Mining, Metallurgical, and Petroleum Engineers. His citation read, "eminent scientist, author, educator, and administrator, and for his personal warmth, outstanding leadership, and devoted service to the profession." In 1970, he was awarded the Ben H. Parker award from the American Institute of Professional Geologists, and in 1973, the American Association of Petroleum Geologists presented him with their Public Service Award. He was an honorary member of the Association of Engineering Geologists, a distinguished member of the Society of Mining Engineers, an honorary life member of the American Association of Petroleum Geologists, and an honorary member of the Pacific Mineral Society. He was a member of the scholastic honorary society, Phi Beta Kappa.

Dr. Campbell is survived by his wife, Catherine, of San Francisco; his son, Dugald Campbell, and two grandchildren, Michael and Denise Campbell, of Whittier; and his sister, Mrs. Flora Houck, of Palo Alto.

No services were held.

*Donations Should Be Made to:*

*Ian Campbell Memorial Fund*

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## CGG OPENS BAKERSFIELD OFFICE

CGG, a geophysical exploration firm with its main North American offices located in Denver recently opened an office in Bakersfield, California. The office is open under the direction of Norbert Blot, CGG's Pacific Coast Area Manager. Bob Cooper mans the office as area representative.

The new office was opened in order to accommodate CGG's expanding activities on the Pacific Coast and will be the base of operations in Alaska, Washington, Oregon, California, Nevada and Arizona.

For further information concerning CGG's operations in these areas, please contact:

Norbert Blot  
3 Park Central, Suite 575  
1515 Arapahoe Street  
Denver, CO 80202  
(303) 571-1143

or

Bob Cooper  
5544 California, Suite 110  
Bakersfield, CA 93007  
(805) 323-9997

## AAPG FIFTY-YEAR MEMBERS

The American Association of Petroleum Geologists recently recognized 53 members, all of whom joined the Association in 1928, as Fifty-Year Members. Each received a specially designed gold pin, showing the AAPG emblem with a "50" contained within the globe.

Fifty-Year Members from the West Coast are:

Richard L. Triplett  
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## PACIFIC SECTION SEPM NEW PUBLICATION

The Mesozoic Symposium volume is the second in the series on Pacific Coast Paleogeography. The Paleozoic volume published last year has been a tremendous success. The editors of this year's Mesozoic volume, D. G. Howell and K. McDougall, have assembled under one cover 40 timely articles (over 580 pages) on Mesozoic Paleogeography of the western United States. The pre-convention price of this volume is \$18.00 and may be ordered from:

Treasurer, Pacific Section SEPM  
P.O. Box 70344 Ambassador Station  
Los Angeles, CA 90070

## Coast

Activity continues within the Coast Society. On November 19th, 44 people enjoyed dining and dancing at Autumn Dinner Dance at the American Legion Hall in Ventura. The steaks were delicious and everyone enjoyed dancing afterwards to Jim Gentry's Country Blues band. Pete Hall proved he could stay with anyone by dancing the night away.

The December 20th meeting was attended by only 27 as the holiday spirit was upon us. These loyal souls heard a very good talk by A. A. Almgren of Union Oil entitled "The Timing of Tertiary Submarine Canyons and Marine Cycles of Deposition in the Southern Sacramento Valley, California."

The new year was opened January 17th with a ladies' night double feature. Geologists and spouses saw Exxon's "Beyond the Shores," about the installation of Platform HONDO, and "Men to Match the Jungle," an epic on drilling operations in the Peruvian mud. Spanish guitar provided an interesting contrast to the jungle mud. Ralph Cahill proved he was at home waiting on tables as doing geology.

Our meetings are scheduled for the third Tuesday of every month through June at the American Legion Hall on Palm Street in Ventura. If you are going to be in the area, just give Keith Whaley a call at (805) 659-0130 for a reservation, and spend the evening with us for a Santa Maria style BBQ and some interesting geology.

KEITH R. WHALEY

### NEW AAPG PUBLICATIONS

1. REEFS AND RELATED CARBONATES — Ecology and Sedimentology (Studies in Geology No. 4), edited by Stanley H. Frost, Malcolm P. Weiss, and John B. Saunders (xiv + 421 pages, 242 figs., 32 tables). This volume includes papers from the 7th Caribbean Geological Congress (symposium on "Caribbean Reef Systems: Holocene and Ancient") and from the AAPG Research Conference held March 1974 in St. Croix, U.S. Virgin Islands. Papers cover modern and ancient reefs, reef biota, and sediments and diagenesis. The price is U.S. \$24.00 (\$19.00 to AAPG and SEPM members).

2. DIAGENESIS OF SANDSTONE (Reprint Series No. 20), compiled by Syed A. Ali and Gerald M. Friedman

(239 pages). This volume contains 12 papers reprinted from the AAPG Bulletin plus a preface by John W. Shelton and additional references on the subject. The price is U.S. \$6.00 (\$5.00 to AAPG and SEPM members).

Send orders to: AAPG, Box 979, Tulsa, Oklahoma 74101.

### LEGISLATIVE ALERT

The California Section of Professional Geological Scientists will seek to establish a unified position of California geologists on the recently introduced "sunset" legislation. We urge that all geologists acquaint themselves with the possible impacts of AB 23-69 STATE REGULATORY AGENCIES: TERMINATION and provide us with your views. Reply either to Howard Anderson, President California Section, 4465 Ninth Street, Riverside, CA 92501, or to William Effinger, Chairman of Legislation & Regulation Committee, 2656 Ptarmigan Drive #4, Walnut Creek, CA 94595.

AB 2369 would add to Title 2 of the Government Code Division 3.5 State Regulatory Agencies: Termination. Section 1685 is aimed at increasing the control of the Legislature through oversight and accountability in regulatory matters. Section 16086 defines regulation and regulatory bodies and provides exception of certain specific functions from this act. Section 16087 sets a schedule of termination by groups. For all functions under the Resources Agency that date is July 1, 1980. Section 16088 and 89 detail the procedures of termination and for legislation of continuation or reestablishment of regulatory functions deemed necessary, and provide a set of criteria by which that judgement will be made.

I have informed my Assemblyman that the time of termination is certainly too abrupt and that there will need be more time for the consideration of appropriate legislation for the continuation of necessary functions. Also I have indicated that the Leg & Reg Committee is studying this proposed legislation with a view of offering recommendations of change, or possibly recommendation of a "no" vote.

However tempting may be the concept of "sunset" legislation we must appreciate the adverse impacts as well as convenience of termination of regulations. Let us have your responses. Watch for other legislative alerts whenever Legislature is in session!

HOWARD T. ANDERSON  
President California-Section APGS

### AAPG COMMITTEE VOLUNTEERS NEEDED

Is the Pacific Section out of touch with National AAPG? Would you be interested in serving on one of the Association's committees? The Pacific Section Executive Committee is preparing a roster of prospective committee persons for consideration by the incoming national Executive Committee. On the following list of standing committees, we have ★starred those committees on which the Pacific Section may be under-represented in 1978-79:

Editorial Board (Bulletin Associate Editors)★  
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Continuing Education★  
Distinguished Lecture  
Environmental Geology★  
Industry Liason  
Membership★  
Marine Geology  
Preservation of Samples and Cores  
Publication  
Public Information★  
Research★  
Stratigraphic Correlations★

Committee appointments are normally for a three-year term and are made in June and July. Most committees meet once each year, at the national convention, and prospective committee members should have a reasonable expectation of being able to attend. However, the Editorial Board and some committees conduct most of their business by mail. To learn what the committees are doing, refer to pages 29 to 41 of the November *Bulletin* (Part II).

If you are interested in serving AAPG on one of these committees, you can write directly to Executive Director Fred Dix in Tulsa. Better still, a letter (or carbon) to Pacific Section President Vern Jones will place you on our Section's roster of candidates. This list will be transmitted to AAPG's President-Elect in May, with the Section's strongest endorsement.

T. L. WRIGHT

### SACRAMENTO

Officers of the Sacramento Petroleum Association for 1978 are:

Ben Cahill, *President*  
Monte R. Doris, *Vice President*  
Don Pinnell, *Secretary-Treasurer*

The Association meets every Wednesday noon at the Steak and Ale restaurant, 7218 Franklin Blvd., Sacramento.

D. B. PINNELL

## FEDERAL LAND WITHDRAWALS:

### A POLICY STATEMENT

In a recent departure from custom, the Executive Committee of the American Association of Petroleum Geologists adopted a policy statement, which, in addition to confirming its support of the American free enterprise system, voiced the following recommendation:

"The Executive Committee is of the opinion that much of the country's most highly prospective areas for oil, gas, and other mineral production exists on federal lands. It is the Committee's recommendation that governmental processes should be expedited whereby all federally controlled areas, offshore and onshore, be made available for judicious energy mineral resource exploration and development."

The current conflict between sound geological practice and present unsound government restrictions prompts the comments that follow.

Most of the federal lands suitable for mineral, forestry, and agricultural development are in the western states and Alaska. Present production in these areas and the extensive continental shelf lands off our coasts indicates a potential for future major mineral development. The assurance of reasonable access to the surface of federal lands is essential to exploration for energy minerals. Of the 877,000,000 acres designated as federal domain, 546,000,000 acres, or 62 percent of the total, are either closed to, or are so burdened by restrictions as to preclude exploration and development of energy minerals.

This growing problem of restrictive federal land management is not one solely for the petroleum and coal industries. Other industries adversely impacted by land restrictions include mining, forestry, farming, grazing, real estate, and recreation.

Under active consideration at present in Congress is H.R. 39, Alaska National Interest Lands Conservation Act, which if passed would withdraw over 140,000,000 acres from mineral, forestry, and agricultural activity. Many of the areas covered by this bill are so remote that they stand for the most part in frozen, pristine isolation. *But is isolation and withdrawal what we want?* The 140,000,000 acres listed in H.R. 39 have not had a mineral assessment, and none is planned. There just might be a life-sustaining mineral wealth on these lands that should be developed.

Restrictions on land usage, withdrawing millions of acres from pro-

duction or possible future production, can only lead inevitably to an eventual deterioration in life style since each citizen must be maintained by the product of so many acres, currently estimated at over 20 tons of mineral production per person per year. And no matter what any of us thinks he can do to control population growth, the fact remains that the number of people in the United States and the world will continue to increase. The lives of these people will depend upon intelligent environment management. And use! *Please bear in mind that federal lands benefit no one unless they are allowed to be used.*

It is almost bureaucratic scandal that so little is known about our land withdrawal program. Although I am told an inventory of withdrawn federal lands is in current preparation, at this time there is no central record of withdrawn lands nor of the reasons for their withdrawal. It would appear that in some instances withdrawn areas have become essentially bureaucratic fiefdoms jealously guarded by local agencies from whom permission to enter such domains on camping or hiking expeditions can require as long as six weeks to obtain.

Moreover, permits to drill wells on leased lands are rarely issued in less than 90 days, and leasing of federal lands in some western states has been delayed for years pending environmental impact statements. Record keeping in various local agency offices has been at best haphazard, and revocation or restoration of withdrawn lands to general use is tied up in a processing morass with a considerable backlog of applications, many over five years old.

Is there any wonder that these deplorable conditions prevail if we take into consideration that the federal bureaucracy has expanded in recent years to the extent that today *there are 23 departments and agencies that administer 112 land-oriented programs!*

When our country was younger, when our population was smaller, when there was an abundance of usable land, restricting land use was not an important survival concern. It is now!

Petroleum geologists serve a multiple role in this country that is at least traditionally conceived to be a capitalistic democracy. As professionals our training qualifies us to advise; as members of an industry our experience equips us to inform; and as citizens our birthright entitles us to speak out on matters that relate to energy and environment.

We now speak out, advise, and in-

form that federal land management programs as they exist today are archaic, inefficient, and detrimental to private sector efforts to resolve the energy crisis. These programs must be geared to maintain an expanding population, to assure a robust economy, and to preserve American free enterprise as a way of life.

EDD R. TURNER  
AAPG, President

## NATIONAL AAPG

The slate of candidates for office in the American Association of Petroleum Geologists was announced by Edd R. Turner, AAPG president. John D. Haun, professor of geology at Colorado School of Mines, Golden, Colorado, and John A. Taylor, an independent geologist from Oklahoma City, head the slate as candidates for president-elect. Candidates for vice-president are Thomas D. Barber, general manager for Michel T. Halbouty, Houston, Texas, and James O. Lewis, Jr., consulting geologist, also of Houston. Candidates for treasurer are Robert L. Fuchs, president, Geosystems Corporation, Westport, Connecticut, and George B. Pichel, chief geologist, Union Oil & Gas Division, Los Angeles, California.

Ballots will be cast by AAPG members in the spring of 1978, and successful candidates will assume their offices on July 1, 1978.

Haun is a graduate of Berea College and the University of Wyoming, and was employed by Stanolind (Amoco) and by Petroleum Research Corporation before becoming professor of geology at Colorado School of Mines. He is also president of Barlow & Haun, Inc., consulting geologists.

Taylor graduated from the University of Oklahoma. He worked for Shell Oil Company and Magnolia Petroleum Company (Mobil) prior to becoming a consulting geologist in 1965.

A graduate of Texas Christian University, Barber was employed by Stanolind (Amoco) before joining Michel T. Halbouty in 1959.

Lewis is a graduate of the University of Kentucky. He became a consulting geologist in 1955, after working for Magnolia Petroleum Company (Mobil) and P. R. Rutherford of Houston.

Fuchs received degrees from Cornell University and the University of Illinois. His career includes service with Mobil Oil Corporation and several other energy-related companies.

A graduate of the University of  
(continued on page 12)

## NATIONAL AAPG

(from page 11)

Texas, Pichel was employed by a Brazilian firm before joining Union Oil Company of California in 1952.

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## 1976 GOOD YEAR FOR ENERGY DISCOVERY

Nearly 17 percent of new field wildcat wells drilled in 1976 by the U.S. petroleum industry resulted in the discovery of new oil and gas reserves, the American Association of Petroleum Geologists reports.

It was the most successful year in history for new field wildcats, that category of wells presenting the greatest risk for explorationists and also the greatest potential for discovery of new and large oil and gas reserves. Success rate for new field wildcats normally ranges between 9 and 11 percent.

Of all exploratory wells drilled, 26.5 percent were productive of some oil or gas, the highest success rate since 1946.

The new field discoveries are estimated to contain ultimate reserves of 513 million barrels of oil and 4.9 trillion cubic feet of gas. The ratio of dry holes was lowest in history.

Almost 10 percent of the new field oil discoveries were judged significant—containing probable reserves of at least one million barrels. Significant gas fields—with at least six billion cubic feet of gas—account for about 14 percent of new gas fields.

Total wells drilled in the U.S. in 1976 were 6.03 percent more than in 1975, and total footage drilled increased 3.85 percent.

Complete drilling statistics for 1976 in the United States, Canada and Mexico appear in the August Bulletin of the American Association of Petroleum Geologists.

## NEWSLETTER

Pacific Section A.A.P.G.

P.O. Box 1072

Bakersfield, California 93302



# PACIFIC PETROLEUM GEOLOGIST NEWSLETTER

of the Pacific Section  
American Association of Petroleum Geologists

VOLUME 32

SUMMER, 1978

NUMBER 2

## **Pacific Section** 1978 ANNUAL MEETING A CAPITOL SUCCESS

The smiles on the faces of General Chairman Jim Weddle and his key committeemen Don Pinnell, John Evers, Burt Amundson, Dalton Pollard, and Monte Doris on Friday, April 28 indicated that things had gone well at the AAPG-SEPM-SEG convention. Although distant from the state's major oil and gas exploration headquarters, the total attendance of 1,017 nearly equaled the 1,030 in Bakersfield in 1977. One item of interest on attendance: a total of 131 more non-members and students came to Sacramento than showed up in Bakersfield. Make of it what you will.

We can report accurately if immodestly that both the technical and political programs were well-received, and Program Chairman Burt Amundson enjoyed a beautiful happening: all invited speakers showed up. Since it was Sacramento, they may have expected a quorum call.

Social and other events went as well, except for the case of a broken-down bus returning from the field trip, which drew 145 passengers (not all on one bus). Eighty of the ladies went on the Capitol Caravan and 69 on the Gold Dust Special to Nevada City. Chevron dominated the men's tennis tournament, which drew 20 entries, with Bill Baker the winner and George Webb the runner-up. The 16-woman tournament was led by two who are domestically affiliated with Occidental: Donna Pasquini the champion, Ollie Blon the runner-up.

At another important meet, two visitors walked away with low gross and low net at the golf tournament: Jeff Waldie of Houston and Gerald Stansberry from Calgary. Bill Gust from our own Del Mar won the Callaway.

Our tiny little group of AAPG-SEPM-SEG members in the Sacramento area is grateful to the unbeat-

able combination of good weather and a good meeting place, an outstanding stable of speakers, and all of you who came to Sacramento.

### 1978 New Officers

*President* ..... Robert N. Hacker  
Consultant

*President-Elect* ... Stanford Eschner  
Vice-President-Manager of Domestic  
Operations for Occidental  
Exploration and Production Company

*Vice-President* .. Theodore "Ted" Off  
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*Secretary* ..... William J. Bazeley  
Senior Geologist for  
Atlantic Richfield Company

*Treasurer* ..... Nancy B. Olson  
Geologist for Texaco Inc.

### 1979 Convention

*Chairman* ..... Wayne D. Estill  
Vice-President for Exploration  
American Pacific International

## NATIONAL AAPG

Dr. John D. Haun, professor of geology at the Colorado School of Mines in Golden, Colorado, and president of Barlow and Haun, Inc., geologists, has been elected president-elect of the American Association of Petroleum Geologists for the 1978-79 term. Haun will assume the presidency of AAPG in July, 1979.

This year's president-elect, Robert D. Gunn, an independent from Wichita Falls, Texas, will assume the presidency of the Association on July 1.

A native of Old Hickory, Tennessee, Haun attended Berea College immediately before and after the second World War, receiving a Bachelor's degree in geology in 1948. During the war, he attended the U.S. Coast Guard Academy and served in the United States Coast Guard from 1942 to 1946. He received M.A. and Ph.D. degrees in geology from the University of Wyoming, beginning his career

as a geologist with Stanolind (now Amoco) in 1951. He served as vice president of Petroleum Research Corporation prior to accepting a position at the Colorado School of Mines. Since 1957, Dr. Haun has also been a partner in the consulting firm of Barlow and Haun, Inc. He is a member of many scientific and professional organizations, and has served on various governmental study groups looking into future supplies of petroleum. He served as president of the Association of Professional Geological Scientists in 1976.

Other candidates elected by the membership include Thomas D. Barber, with Michel T. Halbouty in Houston, Texas, as vice president, and George B. Pichel, with Union Oil Company of California in Los Angeles as treasurer. John J. Amoroso, an independent geologist from Houston, Texas, will begin his second year as the Association's secretary on July 1 and Dr. John Shelton of Stillwater, Oklahoma, will continue for another year as editor of the Association's publications.

Barber, a native of Plainview, Texas, holds degrees from Texas Christian University and served in the United States Navy during the second World War. He began his career with Stanolind (now Amoco) and served in various capacities prior to leaving in 1939 to accept a position as exploration manager for Michel T. Halbouty in Houston. He is now general manager for the Halbouty interests and also vice president of the Halbouty Alaska Oil Company.

Pichel was born in Rio de Janeiro, Brazil, and received his degree in geology at the University of Texas, serving in the United States Army during the second World War. Pichel began his professional career with Conselho Nacional de Petroleo in Brazil as a geologist and a year later, in 1952, joined Union Oil Company of California in New Orleans as a subsurface geologist. He is now manager of exploration affairs for Union.

## FIRST CALL FOR PAPERS— DISNEYLAND 1979 AAPG CONVENTION

Papers keyed to "Creative Concepts" are needed for the Pacific Section AAPG sessions of the 1979 Convention to be held March 14-17 at the Disneyland Hotel in Anaheim. Separate categories stressing new petroleum research, exploration, development and technology for each of the four half day sessions are:

**General** — Creative exploration and development vs. political and economic obstacles.

**Offshore** — New and potential areas in Alaska, Southern California and Baja.

**Onshore** — Recent California and Nevada discoveries or new field developments, potential areas or zones in Alaska, San Joaquin Valley, overthrust belt of southern Nevada and Utah, L.A. basin to Baja, oil potential in non-marine beds, diatomite, and other overlooked reservoirs.

**Technology** — Reservoir geology for enhanced recovery, relationship of geology to well completions, coordination of geological and engineering disciplines, fractured reservoirs, hydrocarbon generation, mud logging, drill stem testing and other evaluation methods.

Papers should demonstrate the use of or stimulate creativity in petroleum exploration and development. Approximately 24 papers averaging 20 minutes presentation time shall be selected. A 10 minute question and answer period shall follow each paper. The program time available will not accommodate all prospective speakers, so authors of abstracts should observe the deadline for submittal which is October 10, 1978 and carefully consider the quality and suitability of their subject and abstract. Competition for selection will be keen. Authors shall be notified as to acceptance of their abstracts by late November. It is imperative that all deadlines relating to papers be strictly observed because the 1979 Convention is six weeks earlier than usual.

Preliminary abstracts of approximately 300 typed words should be submitted to either of the AAPG program co-chairmen as follows:

L. J. Herra  
P.O. Box 821  
Woodland Hills, CA 91365  
(213) 884-8732  
J. E. Schroeder  
Box 3249 Terminal Annex  
Los Angeles, CA 90051  
(213) 689-3423

## THE VISITING GEOLOGIST PROGRAM

The Visiting Petroleum Geologist Program, adopted in 1974, was developed by the AAPG Academic and Industrial Advisory Committees. It was based upon their recommendations to the AAPG Executive Committee that something be done to improve communications between Academia and the geological profession engaged in the search for oil and gas. The program was designed to increase and improve communications between students, faculty, administrators of academic communities, and representatives of the energy industry. Specifically, its aim is to make apparent the true concern and interest of the industry by discussions of the current energy situation, the role of industry in society, new developments, conservation of resources, environmental controls, career opportunities, industry aid to education, etc. This is not a recruiting effort, nor is it a substitute for the Distinguished Lecture Program of the AAPG. Industry not only needs the in-product of Academia but also its support and understanding.

One of the major reasons motivating the inception of this program was a feeling that talks about forming a Federal Oil Company were partly initiated in Academia. It was felt that the input from professional geologists explaining the role of private enterprise in the search for oil and gas would be beneficial to the geological profession and to the nation as a whole.

This program was first started under the chairmanship of Charlie Mankin, former chairman of the Geology Department at the University of Oklahoma and now the State Geologist. I have been chairman for the last two years. During that time, numerous universities have participated in the program. A list of the present speakers appeared on Page 903 of the May issue of the AAPG Bulletin. We are expanding our list of speakers and welcome any new volunteers. Anyone desiring more information, or wishing to take part in this program should write to Lecture Coordinator, AAPG Headquarters, Post Office Box 979, Tulsa, Oklahoma 74101, or call (918) 584-2555.

Because of its success, the AAPG has decided to make this an ongoing

program. Already, we are visiting some schools for a second or third time. We would especially like to add schools outside the oil belt. We mail out brochures to a great number of universities and colleges, but they do not all respond. If you have a rapport with your alma maters, we would like you to encourage them to participate in this program. For those willing to do so, we will mail them a brochure with a list of speakers. They can select their own speaker; if they don't have a choice, the AAPG will assign a qualified speaker from our list.

This program has been especially helpful to the students who have had an opportunity to ask frank, open questions from someone in industry who is not a recruiter. This is particularly helpful to those considering career choices, which schools to attend to do their graduate work, types of courses to take, or what the industry is looking for in students. Personally, I have found this program to be extremely rewarding as well as very enjoyable and, hopefully, it has contributed to a better understanding between Academia and industry.

I strongly urge your support of this program. However, you should not miss any opportunity, independent of this program, to present the message of private enterprise not only to Academia, but to any group willing to listen. It is a sad state of affairs that so many excellent explorationists are having to spend a great deal of their time on governmental legislation and selling the private enterprise system instead of being able to concentrate their effort on the search for oil and gas. Yet, if we don't take care of those chores, we will not have the opportunity to explore for oil, gas, or minerals in the future.

An area almost equivalent to the area east of the Mississippi River, has already been eliminated from exploration, not only for oil and gas but also for minerals. Every piece of land controlled by the Forest Department or the Bureau of Land Management is subject to being classified as "wilderness" and taken from exploration for ever. If there is no halt to this trend, we will soon find our country in the unique situation of being rich in resources but horribly in debt from imports, bankrupt, and facing a major recession, mainly because a few individuals have locked up the greater part of the natural resources of this country.

GEORGE B. PICHEL

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AMERICAN ASSOCIATION  
PETROLEUM GEOLOGISTS**

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PUBLICATIONS COMMITTEE: Pacific Section American Association of Petroleum Geologists, P.O. Box 4164, Thousand Oaks, CA 91359.

## LEVORSEN AWARD

The A. I. Levorsen Memorial Award was established as the result of contributions from many individuals and societies who wished to contribute to a lasting memorial to Dr. A. I. Levorsen. A plaque is given at the regional meetings of the Sections of The American Association of Petroleum Geologists for the best paper, with particular emphasis on creative thinking toward new ideas in exploration. The papers are judged by committees established for each meeting and are presented through the local A. I. Levorsen Memorial Award Committee.

*Past Recipients*

1968	DAVID M. HOPKINS DAVID W. SCHOOL H. GARY GREENE
1969	ROBERT F. DILL
1970	JOHN W. HARBAUGH
1971	No Recipient
1972	M. KEITH SCRIBNER STANFORD ESCHNER
1973	No Recipient
1974	JOHN A. MINCH
1975	DAVID H. BUTLER
1976	D. L. ZIEGLAR JOHN H. SPOTTS
1977	DAVID W. SCHOLL ALAN K. COOPER

## Book Review

### 1976 R.M.A.G. Symposium on the Geology of the Cordilleran Hingeline

*Edited by J. Gilmore Hill*  
cloth 432 pp.

The *Geology of the Cordilleran Hingeline* is a must reference volume for geologists interested in the Paleozoic and Mesozoic evolution of western North America as well as the petroleum potential of the Cordilleran Hingeline and associated overthrust belt.

The Cordilleran Hingeline can be defined as the zone of westward downwarping or flexure of the basement rocks required to accommodate the thick, late Precambrian to Mesozoic age stratigraphic section of the cordilleran geosyncline and is one of the fundamental tectonic features of western North America.

The discovery of Pineview field in the Utah overthrust belt and subsequent discoveries of Rykman Creek and Yellow Creek fields in Wyoming have confirmed the hydrocarbon potential of the area. The Cordilleran Hingeline and associated overthrust belt promise to be one of the most active and potentially rewarding exploration frontiers in the United States.

Technical papers include:

Stratigraphy and petroleum potential

Precambrian  
Cambrian  
Ordovician  
Pennsylvanian  
Permian: Kaibab and  
Phosphoria  
Triassic  
Jurassic: Entrada and Navajo  
Cretaceous: Dakota  
Tertiary

Structural geology

Basin—and—Range province  
Thrust belt geology

Oil Fields

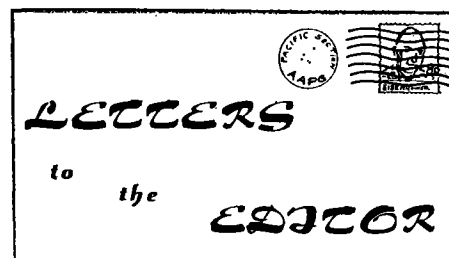
Upper Valley  
Pineview  
Geothermal Resources

Road log for central and northern  
Wasatch Mountains.

Order from:

Rocky Mountain Association of  
Geologists  
505 Colorado Building  
1615 California Street  
Denver, Colorado 80202

Price: RMAG members .....\$24.50  
Nonmembers .....\$27.00



Tom and Frances Baldwin announce that they have moved their consulting office and their residence to a boat in Dana Point Marina, fulfilling a long felt desire for greater exposure to the environment of marine geology.

Please note: P.O. Box 515, Dana Point, CA 92629, phone (714) 493-6179. We cordially invite friends and clients to visit with us on board. Phone for detailed directions to locate our slip. Our old residence telephone (213) 798-4556 will be answered by our son David or his wife Charlene who will forward messages when we are out of pocket.

TOM and FRANCES BALDWIN

## CGG COMPLETES CENTRAL SACRAMENTO VALLEY SURVEY

CGG also announces the completion of its survey of the Central Sacramento Valley. The survey was conducted in order to evaluate the gas potential in and around the Markley Gorge. Specific objectives of the survey were the detection and evaluation of stratigraphic traps, amplitude anomalies and small faults.

All of the data obtained from this survey were recorded by the same Vibroseis crew — 24 fold CDP, 220 foot geophone group intervals and a sweep length of 15 seconds. Standard processing included automatic statics and two displays of preserved amplitude stack for bright spot evaluation. In addition to the standard processing, a special Signet® processing is available on certain portions of the prospect. Signet is a special deconvolution process using the signature of the actual vibroseis signal recorded in the field. The signature is recorded at a depth of 20 to 40 feet.

For further information concerning this survey, please contact:

Andre Leroy or Paul Ettinger  
3 Park Central, Suite 575  
1515 Arapahoe Street  
Denver, CO 80202  
(303) 571-1143

## THE DEVELOPMENT OF THE NORTH SEA OIL AND GAS FIELDS

The exploration and the exploitation of oil fields in the North Sea have already taken their place in the history of the oil industry. The technological lessons which had to be learned through bitter (and costly) experience in this inhospitable area are now written into the text books. Cooperation and technological exchange have been and will continue to be vital to successful operations as the industry continues to develop oil and natural gas resources in the world's most hostile operating environment. EUROPEC 78 — European Offshore Petroleum Conference and Exhibition (Earls Court, London, 24-27 October 1978) will provide the necessary forum of information on North Sea exploration, drilling, production and transportation technology. As the search for oil in deeper and more hostile waters continues, these same techniques are being applied offshore worldwide.

American, Canadian, French, British, Norwegian and Dutch operators had to meet new challenges as they realised that this North Sea is vastly different from anything they had yet encountered. Turbulent seas; wild winter weather; changeable summer weather; waves 100 feet high (the height of a nine story building); wind speeds of 100 miles an hour; gusting up to 160 miles an hour; murky waters and fast tides; working more than 100 miles from a land base in waters of more than 500 feet depth . . . all created problems which had to be conquered.

And they have been conquered. Production in the UK sector is running at an average of 947,961 b/d, nearly half-way to UK self-sufficiency in oil. Britain is currently getting 6 million pounds a day from North Sea oil, according to Dr. J. Dickson Mabon, Minister of State for Energy. The UK Government sees no reason to downgrade its prediction of a 2,500 million pounds contribution to the balance of payments this year. By 1980 income should be 4.5 billion pounds a year, rising to 6 billion pounds a year in 1985.

The United Kingdom will soon be self-sufficient in oil. In fact it will be an important exporter of this low sulphur (average 0.5 per cent by weight — four times less than Arabian light crude), light oil, which commands a premium in the market place.

While remaining one of the most expensive crudes to produce in the world, it remains one of the most sought after. Investment in the northern North Sea oilfields now requires something like \$6000 to \$9000 for every daily barrel of peak producing capacity. By comparison historical development in the bulk of the existing world reserves lies between \$200 and \$400 per daily barrel.

### \$9 Billion By 1980

The Shell/Esso consortium, for example, will have invested nearly \$9 billion by the end of 1980 to develop its existing North Sea discoveries, and will probably have invested over half as much again by 1985.

As Mr. P. B. Baxendell, a Managing Director of the Royal Dutch/Shell Group put it, "We estimate that Shell/Esso in the British North Sea venture will be in the hole to the tune of about \$3 billion before starting the climb out, as the annual cash flow at last turns positive. We have our necks well and truly stuck out — a tremendous commitment to the skill and abilities of our engineers."

Lord Kearton, chairman of the British National Oil Corporation, said this year that recent estimates that around 10,000 million pounds would be spent in the UK sector of the North Sea were too low. He thinks that the total may be closer to 20,000 million pounds.

British manufacturers, who were slow to realise the potential market, have now increased their share of the equipment business to around 60 per cent. Tremendous strides have been made in technology; laying 36-inch pipelines in 500 feet of water at a cost of 1 million pounds a mile; the development of bottom-tow pipelaying and new underwater welding techniques; the towing out and placing of 200,000 ton concrete production platforms with storage facilities in 600 feet of water; working dives to more than 900 feet and the creation of a new generation of mini-submarines; the development of directional drilling; the development of subsea well head systems and subsea production systems; marine risers incorporating telescopic sections to absorb the critical movements of the rig relative to the heaving sea. These are but some of the major steps forward which have been created.

Lord Kearton believes that future development will be even tougher than it has been and could stretch the resources even of some of the world's largest companies. Some of the projects could rank in complexity with the moon shots of a few years ago.

Certainly, he says, the engineering effort will be far bigger than that involved in Britain's nuclear program.

All this has been achieved in the short space of eight years, since the first oil fields were discovered and declared commercial. But first came the gas fields in the southern sector.

It was in 1964, after the international boundaries in the North Sea had been defined, that exploration began in that sector. This resulted in the discovery of the West Sole gas field the following year, followed in 1966 by Hemett, Indefatigable and Leman Bank. Today seven gas fields are producing some 40 billion cubic metres of gas a day, all consumed in the United Kingdom.

Last year the Frigg field, which straddles the UK-Norwegian median line, with the French as operators, came on stream via 2 pipelines to St. Fergus in Scotland. Production should build up to an annual rate of 15 billion cubic metres.

Total proven reserves of North Sea gas under contract to British Gas are 809 billion cubic metres which should support an annual production rate of 170 million cubic metres a day by the 1980s.

Later, associated gas from the oil fields will come ashore and the British and Norwegian Governments are assessing the practicality of a number of joint gas gathering pipeline systems to collect the gas from a number of oil fields which individually would not be economic. The schemes which have been proposed vary in cost from 2,000 million pounds to 5,000 million pounds. Following Ekofisk in September 1969 — operated by Phillips Petroleum on behalf of an international consortium — important oilfields were discovered. The Ekofisk Field now forms the hub of a group of six fields which will eventually produce at the rate of 750,000 b/d. The crude oil is moved via a 220 mile pipeline to Teeside in the UK while the gas goes through a 275 mile line to Emden in West Germany, the world's longest underwater pipeline.

That same year Amoco located the Montrose field, followed by BP's Forties in October, 1970; Shell/Esso's Auk in February, 1971; the same group's Brent in July and Hamilton's Argyll in August. The following year, in September, Mobil's Beryl field was discovered.

Production of North Sea oil began in June, 1975 from Argyll (peak production 36,000 b/d), using a converted semi-submersible drilling rig

as a production unit, and then in November BP's Forties came on stream (500,000 b/d). The next year saw Auk (50,000 b/d); Beryl (100,000 b/d); Montrose (60,000 b/d); Brent (550,000 b/d); and Piper (300,000 b/d) all commence production.

In 1977 Occidental achieved the fastest rate for bringing a field into production with Claymore (170,000 b/d). This was originally considered to be non-commercial but is now linked to the Piper field and the crude oil flows via a pipeline to the terminal at Flotta in the Orkneys.

This year BNOC brought Thistle (210,000 b/d) into production after long delays and oil should begin to flow from Ninian (360,000 b/d) and Heather (60,000 b/d) followed next year by Dunlin (150,000 b/d) and Cormorant (40,000 b/d).

Now the UK Department of Energy estimates that possible total reserves in present discoveries are 17 billion barrels. Total estimated reserves of the UK Continental Shelf are in the range of 20-30 billion barrels though the higher end of the range includes an allowance for areas not yet designated but expected to fall to the UK.

The coming months will see yet another surge of activity. After a period of delays, uncertainty and of re-assessment by operators, a number of development plans have been or will be finalized.

BP, for example, have obtained permission for the UK Department of Energy (which has to approve all production plans) to develop the highly complex structure, Buchan (70,000 b/d), again using a converted semi-submersible drilling rig as used on the Argyll field. It is this decision which prompted the Department to warn that if it was not satisfied with the production methods, it might confiscate the field after four years. It is concerned that BP might simply drain off the easily recoverable reserves and then move off. It is known, however, that the company is considering installing a tension leg platform once it has seen how the reservoir flows.

BP has plans, too, for a 1.25 million pounds development of the Magnus (125,000 b/d) field, the deepest and most northerly so far.

Mesa Petroleum ran into problems with the UK Department of Energy on its scheme for Beatrice, only 12 miles off the Scottish coast. It wanted loading into tankers, but environmentalists and fishermen objected and the Department may call for a pipeline — a highly complicated and expensive operation as the crude oil is very waxy.

Texaco is well ahead with its plans for Tartan and has ordered much top-side equipment and a steel jacket.

The central Brent concrete platform should be installed and step up production to make this the UK's biggest producer with 550,000 b/d of oil, 100,000 b/d of natural gas liquids and 650 million cubic feet of gas by 1982.

Shell/Esso are expected to order platforms for the Fulmar field (180,000 b/d) and also for North Cormorant. Phillips Petroleum may well place an order for a platform for Maureen (40,000 b/d) and Conoco may finalise plans for Hutton.

Pan Ocean continued appraisal drilling on the complicated Brea structure which could peak at 350,000 b/d. There are some 36 discoveries yet to be developed or assessed as to their commercial potential.

Meanwhile exploration continues at a high rate, with special interest in the area west of the Shetlands where last year BP made a find of very heavy oil.

In the Norwegian sector Mobil and Statoil, the Norwegian State oil company, are pushing ahead with the giant Statfjord, 88 per cent of which lies in Norwegian waters. Statoil anticipate production to begin next year. This will eventually be the North Sea's biggest field and the fourth largest offshore field in the world, with 4 billion barrels of oil and 100 billion cubic metres of natural gas. Statoil is currently assessing the feasibility of laying a 36-inch pipeline to the Norwegian mainland, across the deep Norwegian Trench, while Mobil favours a single-point mooring buoy. Amoco anticipates production from the Valhall field (95,000 b/d) will begin in 1981.

The UK sector of the North Sea is expected to produce around 1 billion barrels of crude oil a year by the mid-1980s. Exact levels depend, of course, in the behaviour of reservoirs, the economics of production related to world oil prices, and government policy on conservation.

But with UK domestic consumption at around 700 million barrels, there could be 300 million barrels for export. It is arguable that the best use of this resource could be to find the right mix of North Sea oil and imported cheap Middle East oil for the refineries, thus leaving more of the valuable North Sea oil for export to countries — the United States and Europe — who are prepared to pay premium prices especially as the demand for low sulphur oil for such items as low lead content petrol increases.

Thus the UK could have an export

potential of around 700 million barrels. The UK Government has laid down that two-thirds of North Sea production must be refined in the UK. At the moment some 40 percent is being exported and this is causing concern among politicians and the Government. Up to the end of last September out of the 225 million barrels produced, 90 million barrels were exported — 60 percent of it to Europe, 30 percent to North America and 10 percent to Scandinavia.

One thing above all else that the North Sea exploration and production has proved is that the oil industry possesses, through its scientists and engineers and technicians, the technological and investive skill and ability to tackle problems which not so long ago would have been considered insurmountable. Much of this has been achieved through international cooperation.

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## A. I. LEVORSEN AWARD

Among 19 very good papers on the AAPG Pacific Section program at Sacramento on April 27-28, the judges chose the paper on "Plate Tectonic Evolution of Sacramento Valley, California" by William R. Dickinson and Raymond V. Ingersoll as "Best Paper of the Session." Bill Dickinson's very fine presentation won the A. I. Levorsen Award. A suitable plaque will be given to Bill at the AAPG Pacific Section meeting at Anaheim next March.

It is especially appropriate that Professor Dickinson of Stanford receives this award as Dr. A. I. Levorsen, a noted creative thinker in the petroleum industry a few years back, was once professor of geology and chairman of the Department of Geology at Stanford.

Our committee judging AAPG papers at Sacramento consisted of: Roger Alexander, Gary D. Bell, F. B. Cressy, Gordon Oakeshott (chairman), Hy Seiden, J. D. Traxler, and Gael H. Troughton.

The committee's job was a difficult one as the quality of all papers was good and several were strong candidates for the award.

GORDON OAKESHOTT

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## GEOLOGIST GIVES HYDRO-CARBON ASSESSMENT OF GULF OF MEXICO

"The Gulf of Mexico, and especially the offshore areas of Louisiana and upper coast of Texas have been exposed to many years of extensive exploration activities, resulting in estimated recoverable reserves of at least 69 TCF of gas and 8.1 billion barrels of oil," points out F. C. Sheffield of Tenneco Oil Co. But the reduced quality of prospects and amount of potential reserves in recent lease sales appear to be a potential threat to the billion-dollar producing and refining industries based along the Northern Gulf of Mexico.

It is Sheffield's opinion, however, that at least three offshore areas in the Gulf indicate favorable conditions for the entrapment and generation of hydrocarbons — offshore southwestern Florida, southeastern and southwestern Louisiana, and southeastern Upper Coast Texas. All three prospective areas have one factor in common — they need additional exploratory drilling to define their real economic potential.

"As the oil industry is so painfully aware, reserves in the Gulf of Mexico are being produced rapidly to satisfy the country's energy needs. Unless new exploration areas are identified, the oil industry as we know it in the Gulf of Mexico will undergo a significant reduction in activity in the not too distant future," states Sheffield.

## Northern California

CAN WE PREDICT EARTHQUAKES? Dr. C. B. Raleigh, U.S. Geological Survey, told the Harold Hoots lecture group at Stanford on Monday, January 9th last, that (1) An apparent 150 to 250 year earthquake cycle may possibly exist for the big 1857 quake along the San Andreas. (This could bring another one, maybe, around 2007 to 2107, maybe.) (2) Many observations are being made including changes in tilt, elevation, magnetism, water levels, animal behavior, etc., but it is difficult to determine just what these changes mean. So we in Nor Cal are not hanging by our jiggle strings in suspense.

As a clincher, San Francisco faith healer Dana Livingston predicts there will be no major earthquakes in the

Bay Area during 1978, but many small ones mainly centered in the East Bay. We can now drive the goats home every evening, whistling merrily, without fear. There's an old Irish Proverb — The three merriest things in the world are a cat's kitten, a goat's kid, and a young widow. Hmhmhmhm . . .

✽ ✽ ✽  
DOWSING. Ed Owen of Texas writes to Bill Beatty of Menlo Park: "... Back in 1921 some Swedes came down from Minnesota . . . their witching expert picked a sure spot . . . we kidded them . . . they challenged us to bet the cost of the well that it would be a dry hole . . . we put a few thousand in escrow . . . local citizens got the sheriff to seize the drill as a gambling device . . . bets were withdrawn and the rig was released . . . well was a dry hole and the Swedes returned to Minnysota . . . a pound of luck is worth a ton of brains . . ." Yours, Ed.

✽ ✽ ✽  
FROM S F CHRONICLE, Dec. 30, 1977. "Former professor of geothermal energy at UC Davis, Priscilla C. Grew resigned her job as director of State Department of Conservation to join her husband, a geologist, in Australia. Well, natch . . . geologist's wives, those lucky, lucky gals. And beautiful, too."

✽ ✽ ✽  
TROUBLE AHEAD, MATES. San Francisco plans to raise bridge tolls and parking taxes to discourage auto use in the city. How will this affect Nor Cal Geo Soc? Members may have to jog to the meetings, that's how.

Geology types from USGS, Stanford, and us old retired stiffs (and I do mean stiffs) from down the Peninsula may have to park their cars at the city limits and run the rest of the way to the monthly meetings. Slower joggers might have to camp out in Golden Gate Park so as to arrive at the Leopard Cafe by 11:30 drinking time. We could expect a rounchy looking wrinkled, uncombed, unwashed rabble who may have to show ID cards to suspicious SF police. But they'll be there. There's no determination like that of a curious rock hound. But the rockette houndesses will not be there. They have much better sense and a horror of jogger's nipples. So we're told.

### THE ETERNAL TREADMILL:

Worka like Hell  
To earna de mon  
To buy de spaget  
To getta de streng'  
To worka like Hell  
To earna de mon &c

author unidentified. Can't say we blame him.

OTTMAR F. KOTICK

## EXPLORATION RESTRICTIONS ON PUBLIC LANDS HINDER U.S. ENERGY RESOURCE DEVELOPMENT

Oil flowing from Alaska's North Slope has ended a seven-year drop in domestic production, illustrating that the extent of future U.S. reliance on foreign energy depends on resource development on potentially mineral rich public lands, according to Edd R. Turner, president of the American Association of Petroleum Geologists (AAPG).

Turner told the Gulf Coast Association of Geological Societies here today that most recent reports show daily U.S. petroleum production at about 8.4 million barrels per day (MM/b/d). Daily production peaked about 9.5 MM/b/d in 1970 and had fallen below 8 MM/b/d early this year before the Alaskan oil began flowing.

But Turner said judicious use of wilderness lands is too often frustrated by entrenched bureaucratic mismanagement and harassment by environmental groups. "Of a public domain totaling more than 800 million acres, almost 400 million are closed to mineral exploration and more than 500 million are closed under mineral leasing laws," he said.

He also pointed out another 130 million acres to be withdrawn under legislation pending in Congress (H.R. 39) have not had a mineral assessment and none is planned. "It's almost a bureaucratic scandal that so little is known about our withdrawn lands. Right now there is no place where all withdrawn lands are recorded," he added. "When our country was younger and our population smaller, restricting land use was not a survival concern. It is now."

Further, Turner said, some withdrawn lands are run "like bureaucratic fiefdoms" with even camping permits taking as long as two months to obtain. Leasing of federal lands in the West can be tied up for years due to environmental impact statements, he added.

"This situation must change," Turner said, "because our demand for energy will continue to increase, as is our population. Continuing to restrict the use of our federal lands will inevitably lead to a deterioration in our quality of life, because each citizen must be maintained by the product of so many acres," he added.

"The lives of these people, then, will depend on intelligent environmental management," Turner said. "And if there might be a life sustaining mineral wealth on these with-

drawn lands that should be developed, is isolation and withdrawal what we want? Federal lands benefit no one unless they are allowed to be used," he added.

Turner went on to say that governmental bodies rarely offer alternate solutions to energy generation problems, and environmentalists produce no energy. "It is the petroleum geologists who find and produce energy. Ironically, we provide the energy that makes it possible for environmentalists and bureaucrats to hinder our operations," he said. "It seems that we in the petroleum industry are the only ones really concerned about a continuing flow of energy in the United States.

"As professionals, our training qualifies us to advise. As an industry, our experience equips us to inform; as citizens our birthright entitles us to speak out on matters that relate to energy and environment," Turner told the geologists.

He concluded by urging producers to exercise their "proxies" as "stockholders" in the United States by making their professional judgments known to legislators — in opposition to the arbitrary withdrawal of Alaskan lands from mineral development.

## SECOND CIRCUM-PACIFIC ENERGY AND MINERAL RESOURCES CONFERENCE

July 30 - August 4, 1978  
Honolulu

On behalf of the sponsors I wish to extend a cordial invitation to earth scientists throughout the world to attend the Second Circum-Pacific Energy and Mineral Resources Conference to be held July 30-August 4, 1978, in the Mid-Pacific Conference Center at the Hilton Hawaiian Village, Honolulu. This international conference is supported by 70 prestigious geoscience societies around the world. Approximately 135 invited papers on petroleum, coal, geothermal energy, nuclear energy, minerals, groundwater, and environmental geology will be offered by outstanding international scientists, economists, and statesmen.

The general sessions on Monday and Tuesday will present both policy addresses and regional papers. The All-Conference Luncheon on Monday will feature an address by The Right Honorable J. Douglas Anthony, M.P., Deputy Prime Minister of Australia. The special concurrent sessions on Wednesday, Thursday, and Friday will include approximately 26 papers on petroleum, 7 papers on coal, 26 papers on non-energy minerals, 5 papers on uranium, 16 papers on geo-

thermal energy and groundwater, 8 papers on tectonics, 6 papers on renewable energy sources, and 20 papers on environmental geology.

Major additions to our 1978 Conference will be educational features. These include not only the pre- and post-conference workshops but also educational exhibits by 33 organizations from 15 nations. Another feature will be a public lecture Monday evening by Dr. Barry C. Raleigh of the U.S. Geological Survey on "Earthquakes and the Ring of Fire."

Although the technical program and workshops are comprehensive, the schedule is designed to leave ample time for you to enjoy your visit to the Hawaiian Islands.

For inquiries please contact: American Association of Petroleum Geologists, P.O. Box 979, Tulsa, Oklahoma, U.S.A. 74101.

D. A. HENRIKSEN  
General Chairman  
1978 CPEMR Conference

## GEOLOGICAL FIELD TRIPS 1978 CPEMR CONFERENCE

One Pre-Conference trip is scheduled to Kauai and three Post-Conference trips include the islands of Oahu, Maui and Hawaii. All trips will be led by local geologists from one or more of the following agencies: University of Hawaii, the U.S. Geological Survey, Honolulu Board of Water Supply, Hawaii State Department of Land and Natural Resources. A selection of varied and interesting geological itineraries offer participants an opportunity to take *one* or *all* trips. Features of special interest include those in petrology, volcanology, marine geology, geomorphology, ground water and seismology.

### FIELD TRIP A—ISLAND OF KAUAI

Pre-Conference, July 28-30

**Friday, July 28** — Arrive Honolulu International Airport and transfer on own via the airport shuttle bus to the Neighbor Island Terminal for your connecting flight to Kauai. On arrival at Lihue, you will be taken to the Kauai Surf Hotel for a leisure evening and overnight.

**Saturday, July 29** — View the lovely Hanapepe Valley on the way to the picturesque Waimea Canyon, often referred to as the "Little Grand Canyon of the Pacific," caldera filling lavas, Kokee National Park to Kalalau Lookout where you will view the magnificent amphitheatre-headed valley below situated on Napali Coast, Koloa volcanics, and Lihue basin. Lunch stop included.

**Sunday, July 30** — Kilauea Point and tuff cone. Koloa nepheline mellilite

basalt, Hanalei Bay, and Napali Coast. Transfer to Lihue airport for the return flight to Honolulu, arriving mid-afternoon in time to register for the Conference.

### FIELD TRIP B—ISLAND OF OAHU

Post-Conference, August 6

**Sunday, August 6** — The day's stops include Punchbowl tuff cone, the Pali Lookout, via Schofield saddle between Waianae and Koolau shield volcanoes for the scenic drive along the North Shore to Kahuku. Lunch stop included at Kuilima Hyatt. Continue on to Laie Point and lithified sand dunes, to Makapuu Lookout and Diamond Head Crater.

### FIELD TRIP C—ISLAND OF MAUI

Post-Conference, August 6-7

**Sunday, August 6** — Afternoon transfer to Honolulu airport for your flight to the island of Maui. On arrival, you will be taken to the Maui Surf or Kaanapali Beach Hotel for a leisure evening and overnight.

**Monday, August 7** — Early morning departure for the drive via Kula farmlands to the breath-taking summit of Haleakala Crater rising 10,025 feet above sea level. Lunch stop included. Afternoon drive to Iao Valley, an ancient caldera, McGregor Point mugearite.

### FIELD TRIP D—ISLAND OF HAWAII

Post-Conference, August 7-10

**Monday, August 7** — Afternoon flight from Maui (Field Trip C) or from Honolulu to Hilo, on the Island of Hawaii. On arrival at Hilo, transfer to the Naniloa Surf Hotel for a leisure evening and overnight.

**Tuesday, August 8** — Morning drive via Pahoa to Kapoho cone and flows of 1960, the Kalapana Black Sand Beach, Hilina fault scarps, sea cliffs and flows from 1969 and 1970 Mauna Ulu eruptions which closed the Chain of Craters Road. Lunch is included. On the return trip to Hilo, stop at Rainbow Falls an orchid and anthurium nursery.

**Wednesday, August 9** — En route to Kona, visit Kilauea summit area, Halemaumau, Chain of Craters, Mauna Ulu eruption site, Thurston Lava Tube, continue across southwest rift of Mauna Loa, 1886 oceanite flow, and other Mauna Loa flows. View of Kealahou Bay and fault scarp. A lunch stop is included. You'll stay overnight at either the Kona Surf or Keauhou Beach Hotel.

**Thursday, August 10** — The day's trip includes the Hualalai volcano, 1801 flows, peridotite xenoliths, Puu  
(continued on page 8)

**1978 CPEMR FIELD TRIPS ...**

(from page 7)

Waawaa trachyte pumice cone, hawaiiite locality, Waipio Valley overlook via the Hamakua coast line and vast Parker Ranchlands and beautiful Akaka Falls. Arrive at Hilo airport for your flight to Honolulu and connecting flight homeward bound.

**HALAWA WATER SHAFT  
FIELD TRIP**

**Thursday, August 3** — The Honolulu Board of Water Supply has offered a tour of their Halawa underground station tunneled into the volcanic slopes overlooking Pearl Harbor. You will ride a cable car down to the pump room near sea level and from there take a short walk to view the water development tunnel below. Guides will explain the facilities as well as other methods used to obtain water on the island of Oahu.

**PROTECTION OF MARINE  
ENVIRONMENT PART OF  
SAUDI ARABIAN PLAN  
FOR OCEAN MINING**

"The need for new supplies of basic commodities for industrialization such as zinc, copper and silver, and at the same time, an evergrowing concern for the environment, dominate the worldwide technological and economic development during the last decades of the century," recognizes Dr. Zaki Mustafa, of the Saudi Arabian Sudanese Red Sea Joint Commission. With this understanding, a comprehensive program began in 1976 for the monitoring and protection of the

deep sea and coastal environment in conjunction with technical development to extract valuable metals from ore-bearing muds in the Red Sea.

"By all standards the Red Sea constitutes a unique marine environment," he states, "with a highly diversified, rich, and varying fauna and flora at the reef-covered coasts. The ecosystem is exposed to extreme natural influences — intensive sun irradiation, constant and hot winds, and low inflow of fresh water. Salinity and temperatures of the water are thus higher and oxygen and nutrient contents lower than other seas of the world. This results in a carefully balanced ecological system."

Since the ore-bearing muds in the region with the most promising economic potential occur in the deep ocean, where such conditions as high temperature, high salinity and lack of oxygen prohibit the development of even the lowest form of bacterial life, direct damage to the ecosystem can be expected to be minimal. The concern, then is to analyze any indirect impact of ocean mining brought about by the necessary disposal of the remaining sediments after processing.

**EDITORIAL ...**

Attached is the tabulated final vote on The Bentsen-Pearson natural gas deregulation bill which passed the Senate October 4, 1977, as printed in The Congressional Record.

A number of Senators in both parties held firmly to their positions supporting deregulation, in the face of unusually strong and persistent pressures to change. They deserve much

credit for the success of this critical legislation. You may want to let them know that their difficult votes have not gone unappreciated by their constituents.

(Rollcall Vote No. 524 Leg.)

**YEAS—50**

Allen	Garn	Melcher
Baker	Goldwater	Packwood
Bartlett	Cravel	Pearson
Bellmon	Griffin	Randolph
Bentsen	Hansen	Roth
Burdick	Hatch	Schmitt
Byrd	Hatfield	Schweiker
Harry F., Jr.	Hayakawa	Scott
Chafee	Heinz	Stafford
Chiles	Helms	Stennis
Curtis	Johnston	Stevens
Danforth	Lexalt	Stone
DeConcini	Long	Thurmond
Dole	Lugar	Tower
Domenici	Mathias	Wallop
Eastland	McClellan	Weicker
Ford	McClure	Young

**NAYS—46**

Abourezk	Hart	Morgan
Anderson	Haskell	Moynihan
Bayh	Hathaway	Muskie
Biden	Hollings	Nelson
Brooke	Huddleston	Nunn
Bumpers	Inouye	Pell
Byrd, Robert C.	Jackson	Proxmire
Cannon	Javits	Riegle
Case	Kennedy	Sarbanes
Church	Leahy	Sasser
Clark	Magnuson	Sparkman
Cranston	Matsunaga	Stevenson
Culver	McGovern	Talmadge
Durkin	McIntyre	Williams
Eagleton	Metcalf	
Glenn	Metzenbaum	

PRESENT AND GIVING A LIVE PAIR. AS  
PREVIOUSLY RECORDED—2Ribicoff, against.  
Zorinsky, for.**NOT VOTING—2**

Humphrey Percy

**AN IAN CAMPBELL  
MEMORIAL FUND**

has been established for the purpose of providing scholarships, etc.

Anyone wishing to contribute may do so by sending their contribution, marked "Ian Campbell Memorial Fund" to the American Geological Institute, 5205 Leesburg Pike, Falls Church, VA 22041.

**NEWSLETTER****Pacific Section A.A.P.G.****P.O. Box 1072****Bakersfield, California 93302**



# PACIFIC PETROLEUM GEOLOGIST NEWSLETTER

of the Pacific Section  
American Association of Petroleum Geologists

VOLUME 32

FALL, 1978

NUMBER 3

## SECOND CALL FOR PAPERS: DISNEYLAND 1979 PAAPG CONVENTION

Papers keyed to "Creative Concepts" are needed for the Pacific Section AAPG sessions of the 1979 convention to be held March 14-17 at the Disneyland Hotel in Anaheim. Separate categories stressing new petroleum research, exploration, development and technology for each of the four half day sessions are:

**General** — Creative exploration and development vs. political and economic obstacles.

**Offshore** — New and potential areas in Alaska, Southern California and Baja.

**Onshore** — Recent California and Nevada discoveries or new field developments, potential areas or zones in Alaska, San Joaquin Valley, overthrust belt of southern Nevada and Utah, L.A. basin to Baja, oil potential in non-marine beds, diatomite, and other overlooked reservoirs.

**Technology** — Reservoir geology for enhanced recovery, relationship of geology to well completions, coordination of geological and engineering disciplines, fractured reservoirs, hydrocarbon generation, mud logging, drill stem testing and other evaluation methods.

Papers should demonstrate the use of or stimulate creativity in petroleum exploration and development. Approximately 24 papers averaging 20 minutes presentation time shall be selected. A 10 minute question and answer period shall follow each paper. The program time available will not accommodate all prospective speakers, so authors of abstracts should observe the deadline for submittal which is October 10, 1978 and carefully consider the quality and suitability of their subject and abstract. Competition for selection will be keen. Authors shall be notified as to acceptance of their abstracts by late November. It is imperative that all deadlines relating to papers be strictly observed because the 1979 convention is six weeks earlier than usual.

Preliminary abstracts of approximately 300 typed words should be submitted to either of the AAPG program co-chairmen as follows:

L. J. Herrera  
P.O. Box 821  
Woodland Hills, CA 91365  
(213) 884-8732  
J. E. Schroeder  
Box 3249 Terminal Annex  
Los Angeles, CA 90051  
(213) 689-3423

## Alaska

The Alaska Geological Society is swinging again after its semi-annual end of summer beer and hamburger bust on September 14th. AAPG President Bob Gunn and Executive Director Fred Dix were honored guests at this liquid affair. Messrs. Gunn and Dix were here to gain an insight into Alaskan Land Management problems that were created by Section 17, D-2 of the Alaska Native Claims Act plus other land withdrawals. They viewed Prudhoe Bay and Cook Inlet operations also.

The AGS will sponsor a symposium on "Alaska's Mineral and Energy Resources Economics and Land Status" at the Captain Cook Hotel on April 23-25, 1979. Persons interested in presenting papers should contact Peter Hanley, Dames and Moors, 510 "L" Street, Anchorage, AK 99501.

In June the AGS published a photo directory in conjunction with the Geophysical Society of Alaska. The cost is \$3.00 to members and \$8.00 to non-members.

Visitors this summer have been William Menard, Director of the USGS and Grover Murray, APGS President.

Tom Kelly, one of our more eloquent members, is running for Governor of our Fair State on an independent ticket.

Oil Development Company of Texas and Exxon have closed their Alaska Exploration Offices. Rick Nun-

ley of ODC has transferred to Amarillo. Rod Boane, Dean Morgridge, and "Swede" Larsen are transferring to Houston while Hank Repp goes to Denver.

Officers for the 1978-79 terms are:  
Arlen Ehm ..... President  
Consultant

R. L. McCollom ..... Vice President  
Northern Technical Services

Catherine A. Arie ..... Secretary  
Arco

R. Terrence Budden ..... Treasurer  
Union

J. E. Levorsen ..... President-Elect  
Alaska Dept. Nat. Res.

### Board of Directors

A. E. Brown ..... Arco  
Margaret I. Erwin ..... USGS  
D. Grybeck ..... USGS  
H. W. Kugler ..... Alaska Dept. Nat. Res.  
T. Wilson ..... Marathon

Mr. Wilson is our professional perennial office holder whose term number is lost in antiquity.

P.S. A reliable source has informed us that our illustrious local president was seen stopped on the side of a main Anchorage arterial in "consultation" with two of "Anchorage finest."

TOM KNOCK

## "DISNEYLAND NIGHT"

PACIFIC SECTION MEETING  
AAPG — SEPM — SEG  
MARCH 14-17, 1979

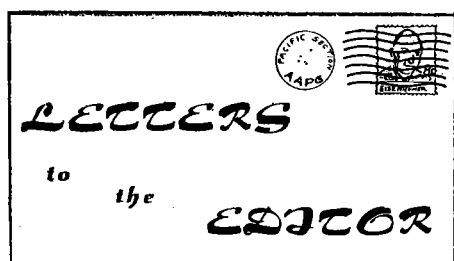
As a portion of your entertainment at the forth coming 1979 annual meeting, Friday night, March 16 has been set aside as "Disneyland Night."

Tickets for the complete park will be available at a substantially reduced rate.

Tickets may be purchased in blocks or individually. Ticket requests will be a part of your pre-registration packet or can be purchased at the meeting.

Your participation will help our society.

Please include in your calendar of "Things to Do" at the AAPG meeting March 14-17, 1979.



Gerald H. Rickels has been appointed associate director of research in charge of exploration and production research for Union Oil Company of California. He will be based at Union's Research Center in Brea, California.

Rickels will head Union's research efforts concerned with development of new exploration and production techniques for hydrocarbons and geothermal energy. He succeeds Richard J. Stegemeier who was elected a vice president of Union and director of all of its research activities June 1.

Rickels joined Union in 1949 as a geologist following his graduation from the University of California at Berkeley with a degree from the College of Engineering in economic geology.

In 1966 Rickels was made assistant exploration manager for Union's western region. He became district exploration manager of Union's southeast Louisiana district in 1971 with offices in New Orleans and Lafayette.

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It has been learned from a reliable source that Tom Diblee is now legally recognized as a geologist. He finally registered in California.

## **Attention: All Spouses**

### **PACIFIC SECTION MEETING AAPG — SEPM — SEG MARCH 14-17, 1979**

The coming AAPG Convention will list your activities under a new title:

#### **Non-Technical Entertainment**

Thursday, the non-technical program will present a continuous showing of geological films which will be interesting to you as well as the technical program attendees. Friday, a luncheon and fashion show will be held in the Disneyland Convention Center.

Mark these events on your calendar as well as the Ice Breaker-Dinner and Dance, the Balboa Harbor Cruise, and Disneyland Night to be held the evenings of March 14, 15 and 16, 1979.

## **Pacific Section EXECUTIVE COMMITTEE MEETING • June 28, 1978**

### *Treasurer's Report*

Approved as submitted. Treasurer reviewed accounting procedures for new officers. Discussion regarding value of publication inventory. Consensus — value of stored publications should be placed at cost of production and not at present sale value.

### *Finance*

A deficit budget for Fiscal 1978-79 was presented based on a loss or no profit from the 1978 Sacramento Convention. All present were assured that the convention proved very profitable and that the Pacific Section will remain solvent for the next fiscal year.

### *Membership*

Membership in the Pacific Section now stands at 1118. There is a need for a Membership Chairman to bring in new members residing in Pacific Section area.

### *Planning and Organization*

Dick Hester will chair the reactivated Planning and Organization Committee composed of past Presidents, Spaulding, Bruer and Hester. Specific problems (or questions) under consideration are — a permanent convention committee, Fall convention, Pacific Section political involvement, Kleinpell publication, student membership and Certificate of Office.

### *Legislation*

Vern Jones proposed that the Pacific Section retain the services of Edward Ellers (legislative analyst) to review and report on California legislation concerning geologists. A fixed fee of \$500 per year would be required. General discussion followed regarding merit of such services. Consensus — Planning and Organization Committee will review and recommend degree of involvement in politics by Pacific Section.

### *Publications*

Inventory of all publications is now completed. Selling price of unsold publications would gross approximately \$45,000. Original cost was \$15,000.

### *Directories*

New directories will be printed in 1979 and will include paid members as of October 15, 1978. Schedule as follows — material to printer in mid-December, check proofs by February 1, available to members at March Convention. Advertising will cover cost of directory. Motion — directory to be distributed to Pacific Section members free — passed.

### *Field Trips*

(A) Coast will sponsor Spring picnic and BBQ, June 8, 1979 (Berger). Discussion and motion that Spring picnic, field trip and BBQ should remain a stag affair (no spouses). Passed.

(B) Request from Richard Schweickert (Columbia University) that the Pacific Section publish a field trip guidebook of Sierra Nevada geology. A nine day field conference is scheduled for fall of 1979 or 1980. Tentative approval was granted with a request for more information as well as a firm estimate of cost. Final approval pending.

### *Conventions*

(A) 1978 Sacramento — A final report covering all expenditures and activities was presented. Convention attendance was 1021. (528 members, 183 spouses, 154 students.) Profit from the meeting was a record \$13,844.84. By every method of measurement, the 1978 Sacramento convention was an outstanding success thanks to Jim Weddle and his top flight committee.

(B) 1979 Disneyland — Formative plans are well under way. Theme — "Creative Concepts." Date: March 14-17. Activities — combined Ice Breaker and Dinner-Dance. Friday night — Disneyland. Field trips to San Onofre and Portuguese Bend.

(C) 1980 Bakersfield — General chairman will be selected soon.

(D) Convention Advisory Committee — Motion: Jim Weddle to chair new committee of six (three past general chairmen plus three lay persons) to provide continuity for convention planning. Will meet at least twice a year. Passed.

### *Kleinpell Publication*

Don Weaver reviewed history of Pacific Section commitment, Kleinpell's activities and AAPG involvement with the Kleinpell volume. Manuscript will be sent to typist and to AAPG executive committee for review in two to three weeks. Also to be included will be a list of recommended qualified West Coast reviewers.

STANLEY E. KARP, *Secretary*

## **ALASKA GEOLOGICAL SOCIETY SYMPOSIUM APRIL 23-25, 1979**

The Alaska Geological Society will present its 1979 Symposium entitled "Alaska's Mineral and Energy Resources, Economics and Land Status," in Anchorage, April 23-25. Inquiries should be directed to Peter Hanley, AGS, P.O. Box 1288, Anchorage, AK 99510.

## MEMORIAL TO GLEN W. LEDINGHAM (1911-1978)

Glen W. Ledingham, one of the most well-known and liked members of the Pacific Section of the American Association of Petroleum Geologists, passed away on April 25, 1973 after a courageous but unsuccessful bout with cancer.

Glen was born in 1911 and spent his youth in Vancouver, British Columbia. He was proud of his Canadian origins and Scottish ancestry. His father owned a paving contract business and afforded his sons the opportunity to learn the rudiments of the business during the summers while they were in high school. This training gave Glen an early appreciation of the "economic facts of life" and was helpful to him in his later career.

Glen was a powerfully-built youth and excelled in the weight events (shot, discus and hammer) during his high school and early college years, enough so that he was considered a prospect for the Canadian Olympic team. He also was very proficient at throwing the caber, which was made from the trunk of a tree about half as long as a telephone pole and of only slightly less circumference. He continued to participate in this sport on special occasions, such as the Caledonian Games, well into his middle years.

He was president of his high school graduating class in 1928 and the following year enrolled in the University of British Columbia in the engineering school.

He first became interested in geology while spending the summer as a member of a geological field crew under the supervision of Duncan McNaughton, 1932 Olympic Games gold medalist in the high jump, a fellow Canadian who had recently received a degree in geology from the University of Southern California.

Glen entered USC in 1933 with the purpose of majoring in geology. For recreation, Glen played on the rugby team and was soon spotted by Coach Howard Jones who tried to interest him in trying out for the position of running guard on the Thundering Herd (as the Trojans were known in those days) Football Team. By this time, Glen was deeply immersed in his geological studies and felt that he did not have the time to devote to American football. Besides, rugby was more fun.

Under the influence of Dr. Thomas Clements, Chairman of the Geology Department, Glen continued his studies and graduated in the mid-

Depression year of 1936. His first job was as a geological draftsman with Western Gulf Oil Co. Nineteen hundred and thirty-eight was a very significant year in Glen's life as it marked his promotion to Assistant Geologist and, more importantly, his marriage to Anne Rumbaugh. The following year he was transferred to Bakersfield where he and Anne spent many happy years and where his two sons, Glen Jr. and Robert were born. For a while, Glen was a one-man staff and Anne helped him at core describing and sampling parties.

Glen developed a nose for oil while participating in the discovery and development of the Paloma Field in the early forties and, in 1942, was promoted to the position of District Geologist for Western Gulf. He served in this position from 1942 to 1948 and it was in this period that the company discovered the Santiago Oil Field, for which Glen deserved much credit.

In 1948, he was promoted to the position of Chief Geologist and moved to Los Angeles. In 1951, he was again promoted—this time to Exploration Manager. This rapid rise in responsibilities demonstrated his ability to work with people and a very thorough knowledge of the exploration end of the oil business.

While in Los Angeles, Glen became more active in AAPG affairs, serving on several committees, both Pacific Section and National. In 1955, he was a candidate for Pacific Section President and in 1957 he was Chairman of the Entertainment Committee for the National Convention in Los Angeles.

Glen was very gregarious and enjoyed good companionship. He was a member of the Petroleum Club and Oil Club and a highly desirable partner in a domino match. One of his greatest pleasures was hosting the annual Oil Club barbecue at his spacious Holliston home in Altadena.

His ability was recognized by Gulf's top executives in Pittsburgh and in 1957 broader horizons were opened up to him. In that year, he was transferred to London as Geological Advisor for Eastern Hemisphere Operations. Five years later, he was appointed the first Managing Director of Nigerian Gulf Oil Co., in which capacity he organized and coordinated an exploration program that resulted in the completion of a major discovery in the western Niger Delta offshore. Shortly after this event, tragedy struck when Anne became ill and died of cancer in 1964.

Glen spent a short time in California recovering from this devastating blow before taking on the job of managing

Gulf's operations in the Netherlands, then back to Nigeria as General Managing Director in Lagos, followed by a return to Bakersfield as District Exploration Manager during the bidding of the Federal offshore leases in the Ventura Basin.

Again, in 1968, foreign operations called him, this time to Tokyo as Vice President of Gulf's Far Eastern Exploration and Production Division, which he held until retirement in 1973. From 1973 to 1977, his extensive worldwide experience and vast fountain of knowledge was in great demand and he served as a consulting geologist to Gulf as well as to several large Japanese companies. In late 1977, he became ill and returned to the United States for treatment by his old family doctor and to enjoy the company of his sons and old friends during his final days. He is survived by his two sons, Glen Jr., who is following in his father's footsteps as a geologist with Aminoil, and Bob, who is working for a doctorate in computer science at the University of Washington.

Those who worked with him professionally could not help but be stimulated by their association with him and the many people in all walks of life who knew him were greatly enriched by his friendship.

JOHN E. KILKENNY

(I am indebted to Peter H. Gardett, Melvin J. Hill, and Duncan A. McNaughton whose memorial to Glen W. Ledingham will soon be published in the AAPG Bulletin.)

## PACIFIC SECTION MEETING AAPG — SEPM — SEG "Ice Breaker & Dinner-Dance"

Because of the excellent setting and facilities of the 1979 annual meeting at the Disneyland Hotel, your convention committee is presenting a combination of the ice breaker and dinner-dance. The entire evening will be available for a get-together, starting with hors d'oeuvres and no-host bar at 6:00 p.m., followed by a complete buffet dinner, and dancing, chatting, etc., till midnight.

In addition, two bands will be playing from 8:30 to midnight; one a disco DJ in the North Ballroom, while in the South Ballroom 35 plus music will be featured.

This tremendous affair will start off the Pacific Section Annual Convention — Disneyland Hotel Convention site.

Remember, put this event on your calendar. Pre-registration forms will be sent out in January. (Free drink ticket with pre-registration.)

## PETROLEUM ENGINEERS APPLY WELLBORE TECHNOLOGY TO EXTRACT ALTERNATIVE ENERGY SOURCES AND VALUABLE MINERALS

Techniques used by the petroleum engineer to recover oil and gas are now being applied in many projects to develop alternative sources of energy. Underground conversion of deep coal and tar sand to recoverable gas is a promising area, and pilot projects and research are now providing valuable new information and practical applications for overcoming economic, technical, safety, and environmental factors.

Other sources of energy in which recovery technology is advancing through the experience of the petroleum industry are held in the earth's geopressed zones, where geothermal energy takes the form of steam, or highly-pressured, very hot water containing dissolved natural gas. The solution mining of deep deposits of uranium, and other valuable ores, also requires the expertise of the petroleum engineering profession.

All of these subjects will be dis-

cussed during sessions in Houston at the 53rd Annual Technical Conference and Exhibition of the Society of Petroleum Engineers. The meeting of the 30,000-member technical and professional organization opens October 2 at the Albert Thomas Convention Center.

Guy Elliott, of Los Alamos Scientific Lab and an author in an SPE session on "In-Situ Processing of Hydrocarbons," is concerned with the influx of water into a reacting coal bed during the gasification process. His work on the LASL concept for underground coal conversions has some promising implications for recovering deep coal in the Four Corners Region of New Mexico. "Because the Navajo Nation is equivocal in its attitude toward recovery of its strippable coal, the long-term fuel supply for present and future Four Corners Region electric generators is uncertain. Other coal supplies must be sought. Conventional underground mining is one expensive possibility. However, chemical recovery of deeper coal by the LASL concept should be reasonably straightforward, if water isolation could be accomplished.

"It is, perhaps, obvious that coal cannot burn if it is too wet . . . by contrast, if water invasion is prevented, coal porosity can be created for further processing, pyrolysis can yield uniform hydrocarbon products, gasification can produce a uniform product, coal is fully consumed (not bypassed) during combustion, and environment problems are minimized. It is important that techniques for measuring and controlling water flow be developed if this technology is to be a contribution in the Nation's energy supply," states Elliott.

Elliott also recognizes that in considering any coal recovery scheme for arid and semi-arid regions, like the Four Corners, one must recognize the overriding importance of water conservation.

E. W. Tiepel, Wyoming Mineral Corporation, is another author who is concerned with water and energy—but as applied to the development of new mining techniques for the in-situ mining of uranium. He points out that this promising new method for meeting the increasing demand for domestic supplies of uranium has some distinct environmental advantages. Among them are "low level geologic disturbance, no air contamination since no grinding or crushing is needed, no production of large quantities of waste materials, no subsidence, low-energy consumption per production unit, and relatively little effect on water resources when proper

restoration methods are applied." At the SPE meeting, he'll discuss the results of on-going research for minimizing environmental impacts on groundwater resources during Wyoming Mineral's demonstration program.

In addition to environmental impact, it is the economic evaluation of alternative energy sources that will ultimately determine their importance in the years to come—as pointed out by two authors at the SPE Meeting who are working on research in geothermal energy.

Claude Jenkins, Aminoil U.S.A., will present "A New Concept in Geothermal Steam Pricing." In his opinion, the complicated pricing formula for current commercial steam production in the Geysers area of northern California needs to be reevaluated. "Geothermal steam is a desirable energy, it is relatively clean, and it can compete (as a source for electrical power) but only without discriminatory tax legislation and with an equitable pricing structure." The Geysers area is currently the only commercial application of steam for generating electrical power in the United States although it is applied at sites in several other countries including Italy, Iceland, New Zealand, and Japan.

According to C. Dale Zinn, who will speak in a session on Geopressed Reservoirs, the economic evaluation of producing methane and electrical energy from the Texas Gulf Coast Geopressed Resource (estimates of this energy resource range from a low of four quads to a high of 100,000 quads) is heavily dependent upon the production scheme that is used. He will report on production schemes that have evolved from the work of the University of Texas geothermal research team, through a U.S. Department of Energy project.

## SEDIMENTOLOGY POSITION OPEN AT UCLA

The University of California, Los Angeles announces an opening for a (temporary) part time teaching position. Sedimentologists with interests in modern and ancient carbonate reef and platform facies successions, with experience in carbonate diagenesis and associated sedimentary economic mineral deposits, are invited to apply. Appointment will be for the Spring Quarter 1979, beginning April, 1979. Send vita and references to W. G. Ernst, Chairman, Department of Earth and Space Sciences, University of California, Los Angeles 90024. The University of California is an equal opportunity/affirmative action employer.

### PACIFIC SECTION — AMERICAN ASSOCIATION PETROLEUM GEOLOGISTS

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Material for publication and requests for previous copies should be addressed to JOHN W. LIDSTROM, TEXACO INC., 3350 WILSHIRE BLVD., L.A., CALIF. 90010.

CHANGE OF ADDRESS, subscription, and membership inquiries should be directed to: MEMBERSHIP SECRETARY, PACIFIC SECTION AAPG, P.O. BOX 1072, BAKERSFIELD, CALIFORNIA 93302.

PUBLICATIONS COMMITTEE: Pacific Section American Association of Petroleum Geologists, P.O. Box 4164, Thousand Oaks, CA 91359.

# Northern California

THE FIRST MEETING of NORCALs current year sputtered off on Wednesday, 13 September at the loveable old beat-up Leopard Cafe in San Francisco. Bearing no resemblance to the huge loud crowd at the Ali-Spinks fight in the New Orleans Superdome, a quiet little gathering of the faithful suffered through a fitful meal and illegible slides illustrating a talk about the earthquake potential affecting the Auburn Dam project in Northern California.

At the risk of some resentment on the part of some executive types, I would urge program arrangers and speakers in all California Affiliated Societies to bear down on clarity of presentation or meetings will just fade away . . . just faadde . . . a . w . a . y . . .

The new gang of rocky longshoremen loading the NCGS ship of geological knowledge were selected last May, viz:

President . . . . . Les B. Magoon  
USGS

Vice President . . . . Rodney G. Huppi  
Chevron O'Seas

Secretary . . . . . Barry Solomon  
USGS

Treasurer . . . . . John T. O'Rourke  
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Ernest I. Rich . . . Stanford University

WHERE THE DEVIL fears to go,  
he sends his mother-in-law. NCGS  
proverbs.

OTT KOTICK

## CALTECH LECTURE SERIES (FALL-WINTER 1978-79)

Wednesday evenings at 8:00 p.m.  
No admission charge. Tickets not required. Open to the public . . . Beckman Auditorium, Michigan Avenue South of Del Mar Boulevard in the city of Pasadena.

### Animals of the Coral Reef

Albert R. Hibbs, Ph.D., Manager of  
Strategic Planning & Studies, JPL.

January 10, 1979

\* \* \*

### Mineral Resource Information and National Policy

H. William Menard, Ph.D., Director,  
U.S. Geological Survey.

January 24, 1979

Note: John P. Budwalda Memorial  
Lecture.

## FUTURE MEETINGS OF BRANNER CLUB (Athenaeum, Caltech, Pasadena)

November 30, 1978

Dr. Art Sylvester, Professor, University of California, Santa Barbara:  
"Fire in the land of ice. The 1973  
volcanic eruption in Iceland."  
\* \* \*

February 27, 1979

Dr. Allen Bassett will arrive from Nepal, to address the Club and guests discussing the "Gemstone exploration in the Himalayas of Nepal."

For information and reservations, contact Lucy Birdsall, USGS, phone 688-2850.

## FEDERAL REGULATION

Federal regulations add three quarters of a point to the annual inflation rate, according to the Council on Wage and Price Stability. And, new regulations now on the drawing board may cost business and consumers another \$35 billion, if implemented. Add to that \$100 billion, which is what the Federal Paperwork Commission estimated federal regulations cost in 1976, and divide by 56.7 million. That's roughly the number of families in the U.S., which adds up to a tab of \$2,380 per family.

## FOR SALE: Geologic Library

Bill Corey is selling the following:

Geo Times, 1971-75

Geology, 1969-78

G.S.A. Bulletins, 1969-78

AAPG, 1966-78

California Geology, 1969-78

Abstracts and Programs from

G.S.A., AAPG, SEPM, 1957-78

Will sell all or part at subscription price or less depending on the volume. There are many other books, publications, etc. which are available. To see, call Gary Bell at (805) 991-2446.

## PACIFIC SECTION MEETING AAPG — SEPM — SEG "BALBOA HARBOR CRUISE"

A night of variety awaits you as we go South to beautiful Newport Beach and board the "Pavilion Queen" for a delightful harbor cruise of Balboa Bay.

In addition to the attractions outside the boat, inside we will have hot and cold hors d'oeuvres, a no-host bar, and dancing to live music.

Include this as another "thing-to-do" at the AAPG Convention on the evening of March 15th.

## FLOATING PRODUCTION SYSTEMS—THE THIRD GENERATION OF "FAMILY TREE"

"With the original single-purpose piled steel platforms as the first generation of offshore structures, the later multi-purpose steel or concrete platforms as the second generation, so floating production platforms may be viewed as the third generation of this family tree."

The observation by Jack R. Hamilton, Worley Engineering Ltd., illustrates the author's view of the future of the floating production system — a subject he will address at the 1978 European Offshore Petroleum Conference and Exhibition. According to Hamilton, "In the face of the continually recurring challenges of deeper, rougher water and rapidly rising costs, the offshore oil and gas industry is moving towards a new generation of production systems where rigid support from the seabed has been replaced by a flexible mooring system which creates less sensitivity to water depth, economic attractions and a new marriage of offshore technologies aimed at solving some current offshore problem area." He calls it a "fundamental variation in the philosophy of offshore field development."

Hamilton particularly recognizes the potential that the FPS concept represents for marginal field development, early production, and deep-water applications. In his presentation to EUROPEC's technically-oriented audience, Hamilton will provide a review of the principal components of the FPS, discuss its advantages, requirements and limitations, and review available structures.

Some 15,000 engineers, scientists, government officials, and industry leaders in the European community are expected to attend the four-day EUROPEC, which features more than 90 technical presentations and some 35,000 net square metres of exhibition space. The conference is jointly sponsored by the Society of Petroleum Engineers, the Institute of Petroleum, The Institution of Electrical Engineers, The Institution of Mechanical Engineers, and The Institution of Civil Engineers. The 1978 European Offshore Petroleum Conference and Exhibition (EUROPEC) opens Tuesday, October 24, at Earls Court, London. For more information contact: EUROPEC, c/o Society of Petroleum Engineers, 6200 North Central Expressway, Dallas, TX 75206, USA.

## PUBLICATIONS . . . PACIFIC SECTION AAPG

During the past year we have received many requests for publications that are out of print. Most of these publications are either too lengthy for reproduction or too costly to reprint. For the interest of those members who may want to obtain the last of these original columns, here is a list of publications that are in limited supply. The number of volumes left are in parenthesis after the price.

- GB 5—Geol. of Southeastern San Joaquin Valley, Calif.—Kern River to Grapevine Canyon (AAPG) 1965 \$4.00 (13)
- GB 13—Geol. and Oilfields of Coastal Areas, Ventura and the Los Angeles Basins, California (AAPG) 1969 \$5.00 (31)
- GB 14—Spring Field Trip, Tehachapi Mountains Crossing of California Aqueduct (AAPG) 1968 \$1.50 (8)
- GB 20—Pacific Slope Geology of Northern Baja Calif. and Adjacent Alta Calif. (AAPG-SEPM-SEG) 1970 \$4.00 (15)
- GB 35—Guide to Geology and Hydrology, Anchorage Area (AGS) 1973 \$3.00 (12)
- MP 14—Selected Papers Presented to the San Joaquin Geol. Soc. Vol. 4, 1972 \$2.50 (24)
- MP 18—Global Tectonics Short Course (SJGS) 1974 \$5.00 (37)
- MP 19—Preprints San Diego Meeting (AAPG-SEPM) 1974 \$2.50 (35)
- MP 26—Late Mesozoic and Cenozoic Sedimentation and Tectonics in California (SJGS) 1977 \$8.00 (29)

## Supplement List

Order from and make checks payable to:

- Publications Committee  
Pacific Section AAPG  
P.O. Box 4164  
Thousand Oaks, CA 91359
- GB 26—Central Santa Ynez Mountains, Santa Barbara County, California (AAPG-SEPM) 1972 \$5.00
- GB 45—Castle Steam Field, Great Valley Sequence (AAPG-SEPM-SEG) 1978 \$5.00
- MP 27—Energy, Exploration and Politics: Preprints 1978 Annual Meeting AAPG-SEG-SEPM Pacific Section \$3.50
- MP 22—Petroleum Exploration, Economics and Risk Evaluation (SJGS) 1978 \$5.00

## MEMBERSHIP DIRECTORY

In order for the 1979-1980 AAPG — SEPM — SEG membership directory to be completed by the 1979 convention only those members who have paid their dues by October 15, 1978 will be included. Questions concerning the directory should be directed to: Kristi Stewart, Union Oil Company, P.O. Box 6176, Ventura, CA 93003. Telephone: (805) 659-0130.

## RECOMMENDED READING

- CALIFORNIA GEOLOGY, vol. 31, no. 5, May 1978
- Historic earthquakes; Effects in Ventura County, by F. Harold Weber, Jr. and Edmund W. Kiessling
- Klamath River Geology: Curley Jack Camp to Ti Bar, Siskiyou County, California, by Albert D. Harris

Rock balls, by Nikola P. Prokopovich

CALIFORNIA GEOLOGY, vol. 31, no. 6, June 1978

The Raymond Hill Fault: An urban geological investigation, by William A. Bryant

Earthquake recurrence intervals: San Andreas Fault, Palmdale, California

Earthquakes in the Willits-Ukiah area, November 1977-April 1978, by T. R. Toppozada

CALIFORNIA GEOLOGY, vol. 31, no. 8, August 1978

Crustal movement on the Foothills fault system near Auburn, California, by John H. Bennett

Foothills fault system and the Auburn Dam, by John H. Bennett

## CALIFORNIA DIVISION OF MINES AND GEOLOGY

County Report 7: Geology and mineral resources of Imperial County, by Paul K. Morton \$8.50

THE ORE BIN, vol. 40, no. 9, August 1978

Mount Baker's changing fumaroles, by Eugene P. Kiver

THE ORE BIN, vol. 40, no. 5, May 1978

Overview of the Bohemia Mining District, by J. J. Gray

## OREGON DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES

Bulletin 93: Geology, mineral resources and rock material of Curry County, Oregon, by Len Ramp, Herbert G. Schlicker and Jerry J. Gray \$7.00

LUCY E. BIRDSALL

## NEWSLETTER

Pacific Section A.A.P.G.

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